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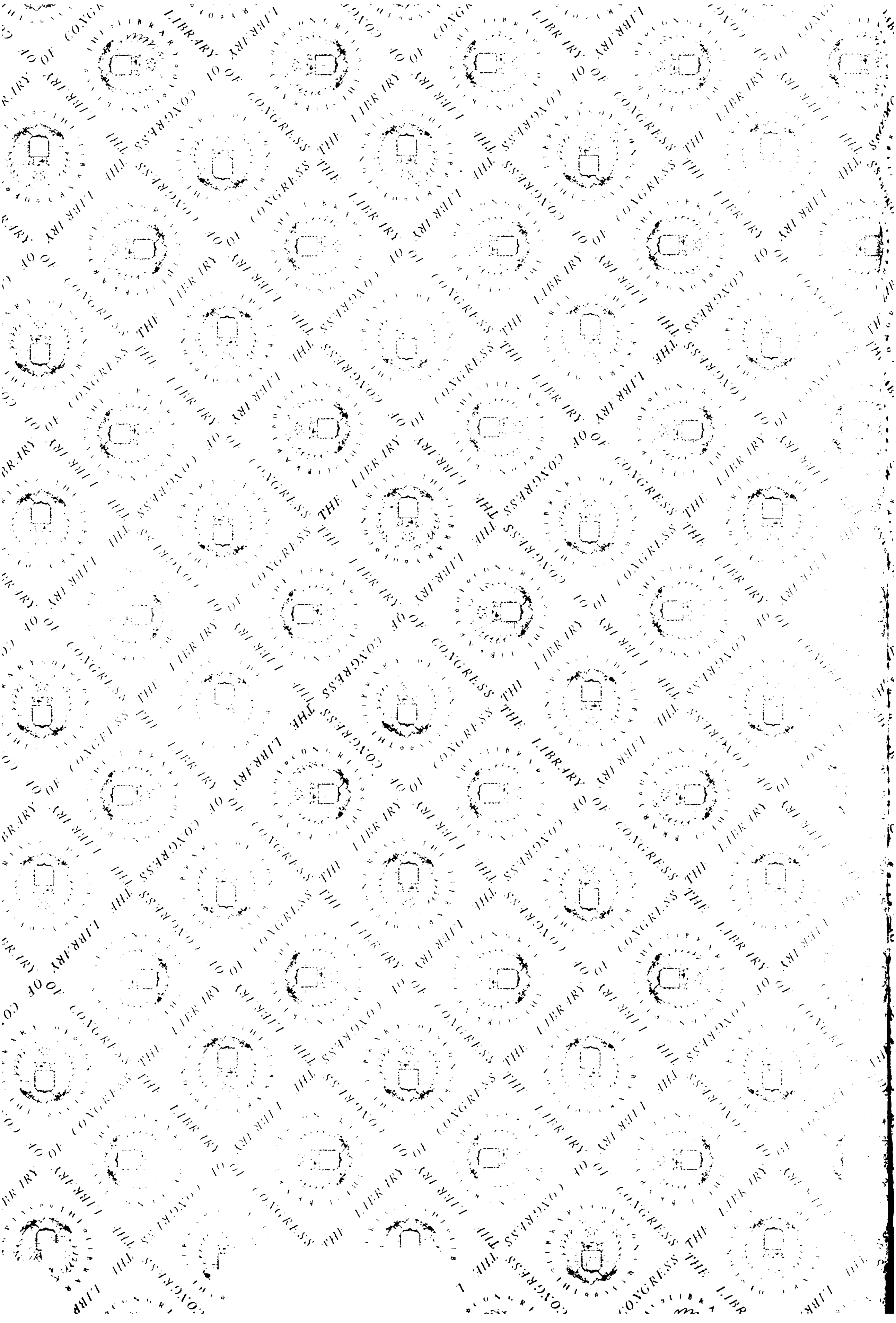
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THE

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A JOURNAL OF HORTICULTURE, RURAL AND DOMESTIC ECONOMY, BOTANY AND NATURAL HISTORY.

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

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TO OUR READERS.

An epicure—some say 't was Quin—
It matters not a single pin—

for "the point of the tale" is that, when rusticating on the southern coast, he was told, with his shaving-water, that there was no John Dory in the market. "Then I shall go to sleep again," was the reply; "call me to-morrow morning." Now, it so happens that there is no John Dory at our command at this present time—no laudatory letter deserving of being here blazoned—no stir-'em-up letter from Miss Penelope of Cackleton Hall requiring a rejoinder—yet we certainly do not incline to go to sleep, nor must we tell the printer to call again when another volume commences. Yet we cannot divine how we should have commenced, or what we should have said, O Reader, had not our eyes rested upon that most suggestive picture by Miss Gillies, "The Past and the Future."

In that picture the elder form, with pensive reflective face turned upon the background prospect, well impersonates the recent "past." That face indicates reflection gathering wisdom from events; bears the impress of regret that more was not accomplished during days gone by, and of sorrow for those taken from us during their continuance. The expression of that face well accords with private regret and sorrow for those irrevocable events; nor is it less expressive of the sorrow of our whole nation for the Leader we have lost—not merely the Leader of a Royal household, but a Leader in all things tending to the improvement of physical and intellectual life.

The heart feels relieved, and the eye brightens, as it looks upon the fair, smiling, upraised features of the other and more youthful figure in that picture. Those onward-looking features are indicative of good resolves, and beaming with hope that those resolves will be abundantly fruitful. They are emblematic of "the future" *we* are looking towards. We have resolved to be still more useful even than heretofore. In that "future" are to be fulfilled the promises of fresh aid; in it beneficial discoveries are to be revealed; we are aware of new illustrations to which it will give birth; and in that future the appropriate riches of the International Exhibition will have to be examined and reported.

So, we are hopeful, trustful, and powerful, not only because the approaching harvest is plenteous but because our harvestmen are vigorous and well-skilled. Nor do our causes for looking smilingly towards "the future" end there, because we are well assured that the samples from our garners will be above an average of excellence; and "the past" gives a guarantee that we shall obtain for them a ready sale.

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WEEKLY CALENDAR.

Day of M'nth	Day of Week.	OCTOBER 1—7, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
1	Tu	Althæa.	30.205—30.167	60—38	N.W.	—	3 af 6	36 af 5	12 m 2	27	10 24	274
2	W	Dropwort.	30.279—30.225	64—40	W.	—	4 6	35 5	36 3	28	10 42	275
3	Th	Chrysanthemums.	30.203—30.075	64—30	N.W.	—	6 6	32 5	0 5	29	11 1	276
4	F	Marvel of Peru.	30.364—30.255	59—40	W.	—	7 6	30 5	sets	●	11 19	277
5	S	Rudbeckia.	30.093—30.017	62—41	W.	—	9 6	28 5	27 a 5	1	11 37	278
6	Sun	19 Sunday after Trinity.	30.267—30.189	68—41	W.	—	11 6	26 5	59 5	2	11 54	279
7	M	Lupinus mutabilis.	30.188—30.118	69—40	W.	—	12 6	23 5	41 6	3	12 11	280

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 63.4° and 43.8° respectively. The greatest heat, 80°, occurred on the 5th in 1834; and the lowest cold, 27°, on the 2nd in 1853. During the period 113 days were fine, and on 125 rain fell.

FLORA OF THE ROMAN CLASSICS;

OR, CATALOGUE OF PLANTS MENTIONED BY LATIN AUTHORS, WITH AN ATTEMPT TO IDENTIFY THEM.

(*Continued from Vol. I., page* 473.)

TUBERS.

THE appearance in your Journal of a very interesting paper on the "Flora of the Roman Classics," induces me to ask if the learned contributor of that article can inform his readers what product of the garden Petronius alludes to in one of his satirical descriptions of the approach of age in the "Tuber horti quod creavit unda." The passage is to be found at page 651 of this author's writings as follows:—

> "Infelix modo crinibus nitebas,
> Phœbo pulchrior et sorore Phœbi;
> At nunc læviorære, vel rotundo
> Horti tubere, quod creavit unda,
> Ridentes, fugis et times, puellas."

(Unhappy one! formerly brighter than Phœbus or than the sister of Phœbus, you looked beautiful with your hair; but now [your head is] more smooth than brass, or than the globular Garden *Tuber*, which rain has brought forth, and you fear and flee from the scoffing girls.)

It has by some been referred to the Tuber terræ, the Cyclamen or Sow-bread (Κυκλαμῖνος); but it cannot be said of the Cyclamen that it is produced by floods.—W. R. Basham.

There are three kinds of Tubers mentioned by the Roman writers—the Tuber, which was a tree, and the "Tuber horti," or "Tuber terræ," mentioned under both names by Petronius and others.

Of the Tuber we have this history from Pliny:—"Æque peregrina sunt zizipha et tuberes, quæ et ipsa non pridem venêre in Italiam, hæc ex Africa, illa ex Syria. Sextus Papinius, quem Consulem vidimus, primus utraque attulit, Divi Augusti novissimis temporibus, in castrorum aggeribus sata, baccis similiora quam malis, sed aggeribus præcipue decora quoniam et in tecta jam silvæ scandunt. Tuberum duo genera; candidum et a colore sericum dictum." (The Jujube trees and the Tubers are alike exotics, which, indeed, have but recently come into Italy, the latter out of Africa and the former out of Syria. Sextus Papinius, whom we have seen Consul, first introduced both of them in the latter part of the reign of the Emperor Augustus, having planted them in raised beds within his camps. The fruits are more like to berries than to Apples. They are chiefly ornamental, grown upon raised beds [terraces], and woods of them clamber upon houses. Of the Tubers there are two kinds—the white, and that from its colour called sericum [cerinum? waxen yellow]).—*Nat. Hist.*, xv., c. 14.

That the Tuber came from northern Africa and was improved by culture we have the testimony of Martial, who says—

> "Lecta suburbanis mittuntur apyrina ramis,
> Et vernæ tuberes: quid tibi cum Libycis?"

(Tubers with soft kernels and home-grown are sent to you from suburban trees: why do you require those from Libya?)—*Epig.*, l. xiii., 42—43.

Libya was the portion of Africa bordering on Egypt, but frequently was extended by the poets to include Carthage. In the same epigram Martial mentions that these stoneless Tubers came from Nomentum, a town of the Sabines, and not far distant from Rome. According to Seneca the term apyrina did not imply that there was no hardness in the kernel, but only less hardness.—(*Seneca's Ep.*, 85.)

Of the same tree, for tree it evidently appears to have been, Pliny further says, after directing the Zizyphus to be raised from seed, "Tuberes melius inseruntur in pruno sylvestri, et malo cotoneo, et in calabrice, ea est spina sylvestris." (The Tubers are better grafted upon the wild Plum, the Cotoneaster, and the Calabrix, which is a wild Thorn.)—*Ibid.*, xvii., c. 10.

In that passage Pliny evidently intimates that they may be sown like the Zizyphus, though grafting is to be preferred, and Palladius states the same. He says—"Nunc (Februarius) tuberes seruntur et inseruntur." (Now, February, Tubers should be sown and grafted.)—*De Re Rustica*, iii., c. 25.

In a subsequent chapter he is still more particular, as follows:—"Mense Septembri circa Kalendas Octobres, vel Februario tuberes seremus sobole, vel nucleis, cujus tenera diligenter nutriri debet infantia. Sumatur cum radicibus planta divulsa: bubulo simo linatur ac luto: statuatur pingui terra et subacta, subditis conchis, et marina alga: terris magna sui parte condatur. Alii pomis statim grana decussa et sole siccata, pingui et prope cribrata terra, auctumno tria simul ponunt, quæ feruntur in unum coire virgultum: quod assidua rigatione juvandum est, atque fossura, quæ solum leviter scalpens teneritudini robur inducat, post annum deinde, vel aliquanto tardius, quæ fuerit de semine planta, transfertur: et hoc genere fructus efficit dulciores. Mense Januario ultimo vel Februario tuberum surculus mirabiliter proficit cydonio insitus, inseritur autem malis omnibus, et piris, et prunis, et Calabrici melius trunco fisso, quam cortice, desuper qualo vel fictili vase munitur, repletis usque prope summitatem surculis terra subacta cum stercore. Prosunt tuberibus, quæ malis prodesse memoravi. Tuberes servabuntur, si obruantur in milio, vel urceolis picatis et oblitis." (In the month of September, about the Kalends of October, or in February, we propagate the Tuber, either from a sucker or from kernels. Its tender infancy should be diligently nurtured. Let the plant be taken up with its roots, smeared with cowdung and clay, planted in rich, well-worked soil, with shells and sea-weed placed beneath, a chief part of it should be buried underground. Others in autumn sow three seeds together, that have been shaken from the fruit and dried in the sun, sowing in rich, well-sifted earth. They are said to unite and produce one

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stem. It must be assiduously watered, in which it delights, and the soil be dug around and lightly scarified, which will bring strength to the tender plant. A year afterwards, or rather later, the plant raised from seed is transplanted, and this produces superior fruit. At the end of January, or during February, a graft of the Tuber inserted on the Quince thrives exceedingly. It is grafted also on all Apples, Pears, and Plums, and on the Calibrix, with more success in the cleft trunk than in the bark.* It is enclosed in a basket or earthen vessel filled to above the graft with earth well mixed with dung. Those things are beneficial to Tubers which I have recorded as being beneficial to Apples. The fruit of the Tubers will be preserved if buried in Millet seed, or in small vessels pitched and well closed.)—*Ibid.*, x., c. 14.

Now, the question to be solved is, What is the modern name of the Tuber tree? To guide us to a correct answer we have these facts—It was a native of Africa; probably resembled the Jujube tree, for it is repeatedly mentioned in connection with it; it was graftable upon the Apple, Pear, and Thorns; it was probably evergreen, because grown against houses; the fruit was eatable, and even agreeable, and capable of being preserved.

To all these characteristics agrees *Rhamnus spina Christi*, or, as it is now called, *Zizyphus spina Christi.* This tree is a native of northern Africa, Barbary, Egypt, and Palestine, the very localities best known to Sextus Papinius. It is not only of the same natural order (Rhamnaceæ) as the Jujube, but is now included in the same genus. It is graftable upon some, if not all the stocks stated by Palladius; and we may remark that if it failed in some it would not be surprising, for promiscuous grafting was one of the delusions under which most of the Roman writers on gardening laboured. It is an evergreen, and peculiarly suitable for the sides of houses, the leaves much resembling those of Ivy. The branches are round and pliant, and being furnished with many sharp spines, calculated to give pain, Haselquist thinks that the crown of thorns put upon our Saviour's head was probably formed of them: hence the specific name of *spina Christi.* The fruit is an oblong drupe, the size of a small plum, enclosing a roundish nucleus or stone, and is said by Desfontaines to be eatable and pleasant. Like those of the Jujube, they improve by being kept.

It was not to the tree Tuber that Petronius alludes under the name of Tuber horti.

In the passage quoted by our correspondent the satirist makes one of his acquaintances, Eumolpus, ridicule the loss of hair which he, Petronius, had sustained. The passage has been thus rendered in English verse:—

> "Beauty's chief ornament, your hair, is lost:
> That vernal grace has felt untimely frost.
> Your naked temples mourn their ravish'd shade;
> Waste as a stubble field your pate is laid.
> Fallacious gods! how swiftly fades our bloom!
> The gifts you first bestow you first resume.
> Unhappy man! charms did once surround
> Your head with shining tresses crown'd,
> So bright that far less brightly glister
> The locks of Phœbus or his sister.
> Now all is chang'd, and in their stead,
> Polish'd as brass, appears your head
> Like a fresh Mushroom, round and bright,
> And scoff'd by girls you take to flight."†

Every one must have noticed how often the pilus, or cap, of the Mushroom is a miniature model of a bald head. Nor is the resemblance much less in some of the freshly-disinterred Truffles.

We have the authority of Martial that the term Tuber was applied to the Mushroom, at all events by the poets, for he has these lines—

> "Rumpimus altricem tenero quæ vertice terram
> Tubera, boletis poma secunda sumus."

(We, Tubers, who with tender head break through our mother earth, are second only to the Boletus.)—*Epig.*, l. xiii., 50.

Now, the Truffle never does break through the surface, but is strictly a subterranean fungus. What fungus was known to the Romans as the Boletus we need not here digress to determine; it was evidently in high esteem, for Juneval says—

> "Vilibus ancipites fungi donentur amicis,
> Boletus domino."

(Uncertain fungi are given to friends of small esteem, the Boletus to the master.)

Pliny speaks of Tubers as follows:—"Et quoniam a miraculis rerum cœpimus, sequemur eorum ordinem, in quibus vel maximum est, aliquid nasci aut vivere sine ulla radice. Tubera hæc vocantur." (Since we have begun concerning the wonders of nature we will follow them in order, and among the chief is that any plant should be either produced or live without a root. Such are those called Tubers.)—*Nat. Hist.*, xix., c. 2.

That Pliny meant the Truffle there can be no doubt, for at considerable length he proceeds to describe these Tubera in words which have been thus translated by Dr. Bostock and Mr. Riley:—

"Truffles generally grow in dry, sandy soils, and spots that are thickly covered with shrubs; in size they are often larger than a Quince, and are found to weigh as much as a pound. There are two kinds of them; the one full of sand, and, consequently, injurious to the teeth, the other free from sand and all impurities. They are distinguished also by their colour, which is red or black, and white within; those of Africa are the most esteemed. Whether the Truffle grows gradually, or whether this blemish of the earth—for it can be looked upon as nothing else—at once assumes the globular form and magnitude which it presents when found; whether, too it is possessed of vitality or not, are all of them questions, which, in my opinion, are not easy to be solved. It decays and rots in a manner precisely similar to wood.

"It is known to me as a fact, that the following circumstance happened to Lartius Licinius, a person of prætorian rank, while minister of justice, a few years ago, at Carthage in Spain; upon biting a Truffle, he found a denarius inside, which all but broke his fore teeth—an evident proof that the Truffle is nothing else but an agglomeration of elementary earth. At all events, it is quite certain that the Truffle belongs to those vegetable productions which spring up spontaneously, and are incapable of being reproduced from seed.

"Of a similar nature, too, is the vegetable production known in the province of Cyrenaica by the name of 'misy,' remarkable for the sweetness of its smell and taste, but more fleshy than the Truffle; the same, too, as to the Iton of the Thracians, and the Geranion of the Greeks.

"The following peculiarities we find mentioned with reference to the Truffle. When there have been showers in autumn, and frequent thunder-storms, Truffles are produced, thunder contributing more particularly to their development; they do not, however, last beyond a year, and are considered the most delicate eating when gathered in spring. In some places the formation of them is attributed to water; as at Mytilene, for instance, where they are never to be found, it is said, unless the rivers overflow, and bring down the seed from Tiara, that being the name of a place at which they are produced in the greatest abundance. The finest Truffles of Asia are those found in the neighbourhood of Lampsacus and Alopeconnesus; the best in Greece are those of the vicinity of Elis."

The opinions that the rain and the overflowing of the river gave birth to the Truffle agrees with the sentence of Petronius Arbiter.—G.

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* Columella, book xi., c. 2, agrees in stating that the grafting should be in January.

† A French translation, published at Amsterdam in 1756, has rendered two of the concluding lines thus:—

> Tête aussi poli qu'aucun metails peut l'etre
> [illegible]

WINTERING CUTTINGS OF BEDDING GERANIUMS,

CALCEOLARIAS AND DIANTHUSES—OBTAINING BOTTOM HEAT.

THE very end of September and the first half of October is about the very best time for planting cuttings of all the bedding Geraniums, where the greatest number is to be kept over the winter in the smallest space, and I was going to say with the least trouble. But when one begins to talk about trouble, it is high time for that one, and for all of his or her clan, to give up all ideas of keeping any plants through the winter, be they bedders or be they not.

The best cuttings of Geraniums are the very tops of the weakest shoots, and all the tops of very stinted plants, or such as may have been hard up for the last month for want of water or free room at the roots.

I once saw an operation worth talking about. The family left for the long vacation, and the gardener, or the man who did the garden, rooted out all the Geraniums before the middle of September. One of them was a seedling raised and flowered that season in the same garden, and they set a store by it, as the saying is, but the man forgot all about it for a month. It was then the middle of October. He had to hunt for it outside the garden; found it—a very large plant, all but quite shrunk up; but he took it in and took off all the tops for cuttings not much over 3 inches long. They, the cuttings, took a very long time to root, but they all did root, and that man says to this day October is the right time to "put down" cuttings for the winter.

After the beginning of October it is too late to make cuttings of Verbenas or Petunias. I mean too late for such people as I am writing to at present. There is nothing that will pay for the trouble to them now but Calceolarias; and all good bedding Calceolarias begin to root now on their own account from the back of the shoots nearest to the ground, and unless it was not a hard time of it, they would go on and improve in this their natural way of rooting till Christmas, and good, soft little cuttings of them will do well enough to be put in under a hand-glass till that time. But the luxury of a hand-glass is not within the reach of every one who reads my letters—I cannot yet afford to have one hand-light myself. But I have lots of tops and stops, which answer just as well for propagation, at ten times less cost and bother. The top parts of flower-pots without the bottom, and that to be turned upside down, will give the best idea of my tops; but drain earthenware-pipes of from six inches to a foot in the bore or barrel are better than flower-pots with the bottoms knocked out with a hammer, and short pieces of such pipes are better than the best hand-glasses in the world for striking autumn cuttings; and the reason why they are better is this—you can place them in front of a south window, or on the south side of a house, or castle, or anything where the sun comes the strongest, and, of course, the hottest part about a place, and there you can put down your cuttings in the middle of the dog days with less risk of suffering than if they were under a hand-glass behind a house, or wall, or castle, or fence, or dyke. The sun cannot touch them, the earthenware things get hot as iron bars, and the damp from the watering rises and makes it exactly like the top heat of a very sweet hotbed in the spring. A square of glass is the stop to keep in that heat for the use of the cuttings.

You never saw how easy all the new Pinks or Dianthus tribes do in and under my tops and stops; and that reminds me that I made a tremendous mistake in the beginning of this letter, when I said that nothing would do much good for out-door cuttings except Calceolarias after October is once in. Why, I shall have to put in scores of cuttings yet of many sorts of Dianthuses. Capt. T. Clark's hybrids, single and double, are the very best yet in existence. I never saw such loads of cut flowers as I cut this season of his single kind. I had only one stool of the double of this strain. I had it from Dr. Lindley's garden through Mr. Booth, our late Secretary to the Horticultural Society, and it must be true. Then I ordered a plant of Dianthus hybridus multiflorus, or double winter-flowering sort, which is figured in the "Illustrated Bouquet;" but I first saw it at the Floral Committee this time last year, and seeing it to be such a first-rate flower I sent for it at once, and now I have a dozen of it, and I shall put in every morsel of cutting the plants will make till the end of November.

But I found out a way for making a damp hotbed, or bottom heat in summer, at no cost. I can have a damp bottom heat on the leads or on the window-sills of the highest house in London, and my tops and stops will strike cuttings outside the window facing the sun in the middle of July, August, or September without shading in the least, and the bottom heat will rise or fall of itself, according to the light there is for the cuttings. The plan will also grow Geraniums and Fuchsias, with many other kinds of plants for the shows. It is a grand thing to have moist bottom heat for a plant the whole summer, and the top to be out in the open air all the while. It is as good as the geo-thermal system of old English gardeners—not the dry destroying heat from heating a bed of earth as M. Naudin very foolishly recommended in his pamphlet. I kept the plan quite a secret till I made sure of it myself. Then one of the best practical men of our day called, and was delighted with the idea of it.

Mr. Marnock, of the Regent's Park Botanic, was the first person who ever recommended growing plants in double pots; and Mr. Eyles, of the Crystal Palace, was the first who proved to the public, and in a public way, that plants could be grown on the surface of water the year round more easily than in any other way in the same arrangement of house-room. Now my plan for bottom heat on the top of a house embraces the essence and the two best points in the double-pot system, and in the plan of growing plants standing on the surface of sheets of water. You can understand how plants rest on the surface of water if you suppose in the country a four or nine-gallon cask to be put down in a horse-pond till the top end was just level with the surface of the water, then you would put a pot Geranium on the end of the cask; then, of course, the bottom of the pot was just on the top of the water, and the roots could then suck and be constantly full of sap.

Now, just look at this. Suppose I put your Geranium-pot inside a bigger pot, as Mr. Marnock recommended, and suppose your pot did not reach the bottom of my empty pot by 2 inches, because the rim of your pot rested upon the top of my pot, and made your pot hang, as it were, inside my pot. Now, that is the new dodge. Where the tops of the two pots join issue for the hanging of the inside one, I run a bit of putty or puddled clay, as for grafts, to make the part perfectly air-tight. The plan hinges on the perfection of the air-tightness between the rims of the two pots. Now, with this putty on and dry, place them on the top of the cask in the pond again, and push in the cask till the water is 2 inches deep over it; the water will then be level with the bottom of the inner pot, and it rests, as it were, on the surface of water just like Mr. Eyles did his basin plants at the Crystal Palace. Instead of a beer-cask to stand the double pot on, suppose you put it in a hand-basin, with water enough to rise to the bottom of the inside pot, or nearly so; or a soup-plate might do; but a deep garden-pot saucer is the best of all, and if you keep the saucer full the whole summer, the heat of the outer pot from the heat of the sun will cause the air which is between the pots to suck up the water, and vapour will rise of itself from the heat; but neither the heat nor the moisture can escape from between the two pots, owing to the stopping with putty or soft clay. Then the inside pot is hanging in a vapour-bath all the summer. The roots next the side of the pot never get quite dry, even if you did not water the pot, because the inside pot itself is constantly as wet from the vapour as if it were in a pond, and the roots stick to any moist surface like that.

I have struck many sorts of cuttings and grown several plants of different families of plants by this simple plan, and I am perfectly satisfied some of you will make wonders to cease in the simplicity of the growing and rooting systems, by some improved method of applying the thing inside as well as outside all manner of houses, hothouses included. Hang up a plant to the ridge of a Pine-stove, and it may thus enjoy damp bottom heat the whole summer. Ferns, in double pots, puttied and put in saucers of water after being potted in nine-parts of cocoa-nut refuse, and one-part yellow maiden loam—the proper proportions for most Ferns which do not rise above 15 inches or 18 inches high—I say Ferns treated that way would astonish Mr. Sims himself. There is nothing in which the finest Ferns will grow nearly so easily as in that very compost, and no drainage to the pots either, except a little of the fibres, of which there is a due proportion in every measure of the refuse. But, say cuttings instead of Ferns, and we shall be nearer perfection. Every plant will root in it faster and more to its liking than in any other thing I ever saw tried.

I was amused the other day on receiving some rare plants from near Bristol, from a rev. gentleman there, all grown in our

Kingston cocoa-nut refuse stuff; and if you could see the vigour of Sibthorpia europea, the most delicate of European growth, you would not wonder at my earnestness.

If I was young again I would undertake to beat Mr. Turner at all the shows with this way of bottom heat to Pelargoniums, and I would never give a drop of strong water to the top of a pot Geranium, but would supply it in vapour from below. My cuttings would be all struck that way out of doors. I mean the cuttings of all common pot plants, as Fuchsias, Cinerarias, Mimulus, Verbenas, Petunias, Geraniums, and all; so that from the cradle they would be accustomed to the system. Just consider yourself the difference there must be between a collection of plants reared this way without as much as a newspaper shading on any of the cuttings from first to last. Again: the plan, I am persuaded, will be found just as useful in-doors as in the open garden—I mean in living-rooms. Any plant one could bring into a drawing-room where the air is very dry during the winter on account of the fires, and more particularly Ferns, would do all the better by having the pot thus protected from the thirsty air of the rooms. In great houses they do this as part of the routine, but not quite so effectually as it might be done. They plunge the pots in china jars or in some ornamental vases, or things of that kind, and then with very green moss they mulch the surface as it were—a most excellent plan, and if the moss was made to fill the top of the open space between the vase and pot very tightly, it would be much better than stuffing in moss all the way down between them.

The great want is to have warm air well retained round the flower-pot, and there would be sufficient moisture for the air from the drainage. But a common flower-pot and a common empty pot of the same kind would keep any plant as safe as a gold vase, if the two rims were made air-tight as in my out-door propagation this very season. We shall say double potting is very good indeed, both in summer and winter; but an air-tight cavity between the two pots has four times more of the advantage resulting from the practice of double potting. We all know the use and value of pillow-cases. What would you say if one were to order flower-pot cases to be made on purpose for this very thing? Many a worse contrivance has been in practice in my time; but I mean to get some pillow-cases for my propagating-pots in the open ground. The price of a couple of hand-glasses would set me up for all my wants; and Mr. Robert Brown, of Surbiton, the inventor of the ridge tiles on the Houses of Parliament, and so common now about London, would soon get them up to my sizes and capacities in his pottery here. The cases would be merely upright pots without bottoms, and I could use them constantly in two ways—put some of my best seedlings in pots, case and putty, and put them on water; or make a ring with the top or bottom of a case on the south border, fill within the ring with cuttings, put the case over the cuttings, and a piece of glass over the top, and what would be the difference between that and my tops and bottoms? I shall call this "The Cultivation and Propagation for the Million;" and whenever I shall hear of a practical gardener taking to the thing, I shall warn him off and tell him plainly to stick to his hotbeds, or try the geothermal plan, or anything but this. D. BEATON.

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 24.

FLORAL COMMITTEE.—When firing that casual shot about the bedding-out at Kensington Gore, and the immense labour there seemed to be bestowed upon it, I had in my mind a very simple matter, which I will explain presently; and I can assure "F. R." that the reference to the doings of the past was prompted by the feeling that I share with many others, that the old leaven is not eradicated yet. That the Royal Horticultural Society has made most rapid strides in public favour there can be no question; that it has taken many steps well calculated to advance it in that respect is also patent. The appointment of such men as Mr. Murray and Mr. Eyles as its managing powers, the establishment of the Floral and Fruit Committees, the popular character of its exhibitions (so different from the exclusiveness of former days), all augur well: but there are still those connected with it, of whom to say the least, the public is somewhat shy of trusting; and already, as perhaps "F. R." is aware, a considerable sum beyond the original estimate has been expended. However, as they have such a large accession of members, possibly the difficulty will be to know what to do with their money. Nor should I have probably alluded to it but for this reason:—I believe it is intended that it shall be not only a show but a model place; and that noblemen and gentlemen from all parts of the kingdom will visit it, and, most likely, desire something of the kind to be done in their own place.

Now I know a little of what comes of this. My lord goes into the garden at Belleville, calls the gardener and says, "Harris, I saw the gardens at Kensington Gore the other day, and should very much like to know why I can't have mine as good." If Harris ventures to suggest that it requires a great deal of labour he is immediately pooh-poohed; for although my lord cares not how many pounds he expends to preserve his game, he grudges every one expended on the ornamental part of his grounds at any rate: and therefore I think it is only but just fair to let good folks know what really is the labour required to keep such a garden in trim, and to suggest that it is not qualified to be a model garden; for that we must look to the Crystal Palace, Kew, or (as Mr. Beaton seems to speak so highly of it), Hampton Court.

And now, having exonerated myself from the charge of unfairness, I hope, the Floral Committee may be reported. The subjects sent in for examination were few in number.

From Mr. G. M'Intosh came Lophospermum grandiflorum coccineum, not unlike Jacksoni, and not considered distinct enough to merit any award.

From Mr. Hanley, gardener to Sir Culling Eardley, came Oxalis tropæloides, which was stated to have been purchased under that name in Russia. The foliage is dark and the habit dwarf, well calculated for an edging; but it was recognised as an old plant, its true name being Corniculata rubra.

Mr. Salter, of Hammersmith, sent some interesting subjects—viz., Geranium tetragona; Weigela rosea variegata; Arabis procurrens foliis variegatis, a pretty rock plant; Fuchsia corymbiflora foliis variegatis; Vaccinium vitis-idæa foliis variegatis, a very pretty dwarf shrub, well calculated for the edging of an American bed—for this a Label of Commendation was awarded; and Mentha heterophylla foliis variegatis.

Mr. Kinghorn, of Richmond, sent a very curious plant—Anigozanthus Manglesi, which had been forwarded to him by the Very Rev. George F. Pownall, Dean of Perth, Western Australia. It is by no means a new plant, having been figured years ago in Sweet, but it is very sterling: we hear sometimes people exclaim in looking at a flower, "How like wax!" This really looks as if it had been cut out of cloth, and the back of the flower-scape almost looks like the tags on a soldier's shoulder-knot. The colour is a bright green and brilliant scarlet, and, we doubt not, will prove a very great favourite with ladies. It is said to be difficult of cultivation; but these difficulties are now vanishing, and the skill that has made the Disa bloom will probably make the Anigozanthus hold its own in winter, when it is said to "fog off."

Messrs. Chater & Co., of Braintree, sent a seedling bedding Dahlia, called King of the Dwarfs, about whose merits the Committee were divided; but I rather think it will turn out to be something good yet.

From Mr. Saunders, of Reigate, came Echeveria ibiflora—a very curious succulent plant, with a beautiful purplish-mauve tint. For this a First-class Certificate was awarded.

Mr. Charles Turner, of Slough, sent Dahlia Mrs. Bush, a very beautiful light rose, of good form, great smoothness of petal, and well up in the centre—for this a First-class Certificate was awarded. He also sent a magnificent bloom of Pope's Earl of Derby, a flower of very great substance and great depth, for which a First-class Certificate has been already awarded: also Ensign, red, too small, and which some one slyly said was evidently not "lumpish."

Mr. Wheeler, of Warminster, sent also one, very rough, and without a single good property.

From Mr. Fay, of Tottenham, came a species of Lælia, with nothing of novelty about it. And lastly, from the gardens of the Society, a fine Fern—Cyrtomium caryotideum, to which a First-class Certificate was given.

Previous to the Committee breaking up, a resolution was passed unanimously in reference to the omission from the schedule of the present year of certain florists' flowers—Tulips, Pinks, Pansies, Carnations, Picotees, Verbenas, and Ranunculuses, and suggesting to the Council that they be included in that for 1862. This has plainly been an omission in this year, and have no doubt will be gladly remedied.—D., *Deal.*

SUCCESSFUL BEDS.

I QUITE agree with a correspondent in a late Number who praised the Geranium at the expense of the Verbena as a bedder. If the soil is rich and beds large so that you can peg perpetually and keep Verbenas growing they are all very well; but in small beds in small gardens, where the soil is kept poor to prevent rampant growth in the Geraniums, and the room is stinted, Verbenas will not do at all. They make a splendid show for one month (August), but neither before nor after are they good for much. Purple King is the best, but his attempts at continuous blooming are very poor unless there is continuous growth. If Mr. Beaton can raise a Geranium to supply the place of Purple King, he will certainly deserve a peerage and be created Baron Beaton or Duke of Surbiton. In white Verbenas Mrs. Alford is better than Snowflake; she is more dwarf and produces finer trusses. It is most desirable, if possible, to be independent of Verbenas in small gardens, Geraniums are so much more easily dealt with in winter and so much more continuous in bloom. Bijou must do instead of white Verbena. But, alas! there is nought to put in the place of Purple King. What will Madame Caillag do? Amongst the whites what a beautiful thing is Madame Vaucher. I have not yet bedded it, but its trusses are bold and habit perfect; its growth about the same as that beautiful gem Christine. I observe that Frogmore is not to be distinguished from Crystal Palace or Trentham Scarlet: their habit is precisely similar, and time of bloom the same. Tom Thumb beats them both to nothing in July, but they beat him as completely now. Tom must be kept for the earliest bloom, and Frogmore or Crystal Palace for the later. Punch, if his constitution was not quite so robust, would beat both. I have good beds this year with the following combinations, the first named being in each case the centre:—Purple Nosegay, Flower of the Day, Little David, and Lobelia; Crystal Palace, Purple King, and Cerastium; Countess of Warwick and plum-coloured Verbena Ariosto; Brilliant and Purple King. A long bed of Ocrise Unique with a strip of Ageratum down the centre, but not quite to each end, and Cerastium round has been much admired. Calceolaria, Imperial Crimson, and Christine, a good bed. Imperial Crimson and Christine contrast well.

These are a few of the best out of many. Like many of my neighbours I am quite disgusted with Gazania splendens; last year it was all right, but this year, because the weather was dry and hot when it ought to have been in its chief beauty, it would do nothing. One bed in the garden was planted with Calceolaria and Crystal Palace Scarlet, plant for plant; it was a raised bed of considerable size, it was frightfully gay all the summer, and rather kept up the impression that there was a perpetual recruiting party in the garden—its aspect was intensely military. Of all the Scarlets, Brilliant has kept up the most continuous bloom. It is, indeed, a friend in need; under glass, out of doors, in pots, or in soil, it always does what you want it. If some *savan* in the gardening world would give us a list, not too long, of bedding Geraniums of distinct colour, it would be useful to those who, like myself, mean to adhere almost entirely to this tribe for bedding purposes. All plants intended to make a good summer show—that is, in June and July, should be struck in autumn. I have just potted two thousand good plants, as good as gardeners' stock often is in May. They were all put in between July 23rd and August 10th.—R. B., *Radcliffe-on-Trent.*

LIFTING THE ROOTS OF VINES.

As the time of lifting and replanting Vines is at hand, I wish to trouble you with particulars of the Vines intended to be lifted, and solicit your opinion on the way I purpose planting them. First, a lean-to house, with an inside front border 4 feet wide, in which are planted Vines some seven or eight years old; they are strong and healthy, but shy bearers and much troubled with shanking. On the outside border are planted Vines, some thirty years old, in a very poor state. I purpose to throw those out altogether and make a new border. As the present border is 5 feet in depth, I intend to turn all out to that depth and thoroughly drain it, then to fill in 2 feet roughish stones, on the top of which I will place 1 foot of lime riddlings, chiefly small limestones. Now, this I am most desirous to ascertain, Whether there is any fear of the roots descending through the drainage in any reasonable time, provided the compost is all that can be wished for. The inside Vines I intend leaving as they are, to make sure of a few Grapes. They have the liberty of the outside border; but I will endeavour to leave them undisturbed as much as possible at present, and plant young Vines outside, so that, if the inside Vines do not become more productive, I can lift them when the outside ones are furnished—say three years hence.—ALPHA.

[Your plan seems the best that can be adopted under the circumstances; but we think excavating the border to the depth of 5 feet unnecessary. We are advocates for a wide border rather than a deep one, and if the border was raised a little above the adjoining ground so much the better. If your ground is at all wet with a clayey bottom, let the foundation of the border, which is the clay subsoil, be shaped into a sort of shallow ridge-and-furrow form, the furrows being not more than 6 feet apart, and along each lay a pipe-drain sunk a little below the bottom of the ridge just mentioned, and these drains to communicate with a main one to carry the water clean away. Now, supposing the top of the ridge here mentioned was only 2 feet 6 inches below the surface, and the ground to the furrow to descend 6 inches, which would be 3 feet. This will be ample both for drainage and border. Let the clay border be smoothed fine; or if you like to concrete or asphalte it, or cover it with blue slates, you can do so. The latter bedded in mortar will be cheapest; whichever it is let the drip enter the drain, and on the top of it lay a covering of brickbats that have mortar adhering to them, or stones will do, and a little finer stuff nearer the top. We seldom make our Vine-borders more than 18 inches or 20 inches deep of compost, and this also contains a great deal of stones or mortar rubbish. We do not think it advisable to debar the roots from rambling amongst the drainage here mentioned, as they seemingly enjoy that more than many fine mixtures prepared for them. The only thing is, not to have that drainage too far from the surface; but if there be a foot of it and 18 inches of a suitable compost not too rich in manure, we have no doubt but you will have excellent canes at the end of two years. But give the border width. If there be a walk in the way make it borden also, as we have found Vine roots thirty feet from the house. Possibly we may be giving some more particulars on this important subject, which is one of the utmost consequence to the fruit gardener and all the community as well.]

NEW POTATOES IN THE OPEN GROUND BY THE 1ST OF MAY.

I HAVE just read my notice and the reply of "W." about planting early Potatoes. "A place in England where there is scarcely any frost!" Well, thought I, I have committed myself; but to make as good a job of it as I possibly could I went at once to my neighbour, and the facts are these.

He has grown early Potatoes in the spot mentioned for eight or ten years, mostly planting in the latter part of November, and has *never had a crop injured by frost*, except that once or twice his Potatoes were up forming rows, when a very severe frost rendered the land around almost as impervious as iron, and the pools would bear the weight of man or beast, but the plants came up in a short time just a little yellow at the top, but not injured a bit. Many times when it has been rather tough work to break the frost on the pools with the heel of your shoe, this Potato-ground was *not frozen in the slightest degree;* and for hoar frost it is just a thing to laugh at, for it has *never injured a leaf.* Without a single exception the hoar frost has been as harmless as the "dew at summer eve."

With respect to "W.'s" remark—"Your St. Ives correspondent must not expect to rival his neighbours in the vicinity of Penzance," my friend says, "I challenge any man in the kingdom to raise Potatoes in the open ground sooner than I." He has sometimes taken his crop on the 1st of May, which yielded about one-third of a Cornish bushel per lace of 36 square yards, one-third of a Cornish bushel being about 75 lbs.

Mark, my friend is not a gardener, but a farmer, and a farmer of the old school. The fact that those plots, now so valuable for early Potato culture, were not cultivated at all for many years until a "sharp one" in the neighbourhood asked for them, shows plainly enough that my old friend is no adept in the culture of early Potatoes. Indeed I know that though he has his crop early in May, and the seed not sprouted—his seed has not been of the earliest kind; he calls them "Axbridge Kidneys" (Ash-leaved Kidneys?)—and the probability is that if he planted the earliest kinds he would have his crops much earlier than the 1st of May.

P.S.—I have just been seeing the little plots of ground. It is situated on the western side of St. Ives bay, with an aspect a point or two south of east, the irregularities of the ground giving them that advantage. Sheltered on every side, except a little exposed to the east and south-east winds, but not much. My friend has never had the plants blasted by the wind of any consequence but once, when the east wind blew with great force. The soil, I suppose, may be called loamy (I do not understand much about the names and nature of soils). It rests on a stony clay, and is very deep; and under the clay is the "trap" rock. An inclination of at least 45° gives it the advantage of good drainage. The sea is near enough for one standing in the meadow or garden to throw stones to the gulls, and hit them if he can throw "nice" enough—in fact, a few yards at most; and the bottom of the plot, the lower part I mean, is only a few yards above the sea level. The manure applied to the crops is of no particular kind—guano, sandy dung from the house, &c. It has the first peep of the rising sun, and to-day the sunbeams were still smiling on it at three o'clock; but I think they were on the point of leaving. I forgot to ask him about the earthing up, but will try to remember next time I see him. He has taken up his crop on the 1st of May in the open ground, and sold for £4 per Cornish bushel, and made of a small part of the plot at the rate of £250 per acre at home; but of course he did not make that of the whole.

I suppose the rocks below must favour him by the sun's rays striking there and glancing on the land; for they run out at a gentle inclination for a good way.—M. ANTHONY, *Providence Mines, St. Ives, Cornwall.*

PROPAGATING CERASTIUM TOMENTOSUM AND LOBELIA SPECIOSA.

WILL you inform me whether Cerastium tomentosum, which I use as an edging, should be reared from cuttings, or if the plants are left in the ground will they remain alive through the winter, and make a good edging for next season? Also, whether Lobelia speciosa should be reared from cuttings taken now, or from seed; or would a few old plants saved through the winter furnish cuttings in the spring?—B. B.

[These inquiries have been answered repeatedly. The Cerastium tomentosum is quite hardy, and is to be divided at the roots every year in April and replanted, and it comes from cuttings to begin with easier than any other plant. Old plants of Lobelia speciosa should be kept over the winter, and cuttings made from them in the spring; but it comes quite true from seeds. Some of the first houses in London, however, did not send it out true the last two seasons; but you can get it guaranteed, or a certain sum of money if it is not true. We would not advise any one to buy Lobelia speciosa seeds. There were thirty kinds of Lobelia speciosa sent for trial at Chiswick in 1860, and, of course, only one of them was true. The seed trade in general do not know it at all, and every one must save his own seed of it till the true kind gets into the regular market. The Royal Horticultural Society grow their own seeds of Lobelia speciosa; at the Crystal Palace they do the same; and at most of the large country seats the same also, and it never varies in the smallest degree with all these parties. Nevertheless, we ourselves failed to procure it in London no later than last season. We recommend the subject to the attention of dealers.]

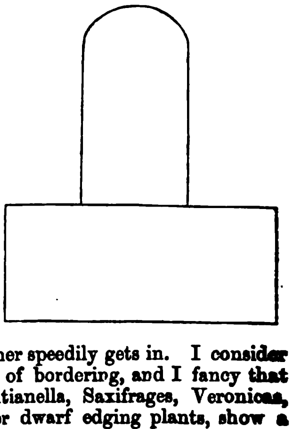
PRUNING ROSES IN POTS.

Mary is trying to grow a few Roses in pots. They are all China and Tea-scented ones, on their own roots, most probably from cuttings struck early this year; at all events, with the exception of one—Devoniensis, which is two years old, they are not more than twelve months old. *Mary* has read carefully Mr. Appleby's directions for the culture of Roses in pots, but she is afraid she does not quite understand the term used in reference to pruning China and Tea Roses. He says Vol. XXIV., No. 14, July 31st, 1860, page 212), the method of pruning them may be designated pollard pruning, or cutting the shoots close to the soil of the pot. Does he mean all the [illegible] plants to be pruned so closely? *Mary* intends to put her Roses in larger pots. Will it be better to prune them in November, or to wait until the spring? They will be in a cold frame during the winter, and be placed in a small conservatory in the spring. *Mary* would not have troubled the Editors with these questions, but the gardener of whom the trees were bought told her the less Rose trees growing in pots were pruned the better for them, and to take the point of the shoots out was quite sufficient for them. The names of the Roses *Mary* has at present, are Adam Moiré, Archduke Charles, Queen of Bourbons, Souvenir d'un Ami, and Devoniensis. This last has three stems, and is in an eight-inch pot. The others are in five-inch pots. Most of them have had flowers on, but they are not in a good shape, and *Mary* would like to try to grow them into a better shape.

[The gardener who told "MARY" that the less Rose trees growing in pots were pruned the better for them, and to take out the points of the shoots was quite sufficient for them, cannot have had much experience of the culture of Roses in pots, nor can he ever have seen the Roses in pots exhibited by the great Rose growers at the shows near London. The particular class of Roses "MARY" alludes to—namely, Tea and China, require close pruning, because they bear their fragrant flowers on the current year's wood, and, therefore, when they are pruned they are something like pollards, a term Mr. Appleby uses to distinguish that mode from the more open system that stronger-growing classes of Roses require in pruning. The reason why Tea-scented and China Roses are better for pruning close is, because the young wood of these kinds is more tender, and does not ripen much beyond the lowest parts of the year's shoots. If "MARY'S" plants are weak and have but few shoots she should cut them down close, and in the spring when fresh shoots appear and have made some length of shoot, they should be spread out equally on every side, so as to form handsome specimens. The best compost for Tea and China Roses is a mixture of loam—that is, decayed sods one half, and old cowdung, leaf mould, and silver sand in equal parts to form the other half. Repot now and place the Roses against a shady wall on coal ashes. Towards the end of October remove them into the cold pit, keeping the soil just moist and no more. Then when the leaves turn yellow and partly fall off, prune the plants down to near the soil, and let them remain at rest till February or March. Then give them a soaking of milkwarm water and remove them into the conservatory. Attend to the training as the shoots advance, and keep down insects, and with regular watering, syringing, and keeping up a moderate temperature "MARY'S" Roses will give her satisfaction. Repeat the potting and pruning in the following autumn, and then the plants will continue to advance in size and beauty year after year.]

EDGING MATERIALS FOR WALKS AND BEDS.

I HAVE read with interest Mr. Robson's communication on the above, and having tried various things allow me to say that, like many other discoveries, I accidentally found some bricks with round top-sides which I found to answer very well by putting a row of common brick for a foundation under them thus:—



They have stood the test of seven years, and are as good now as then. I then got the maker to lengthen both the depth and length of the bricks, in order that I might dispense with the bricks below, and have now had them in use five years —18 inches long, 9 inches deep, 3 inches thick, and round on the top, made of fire-clay, and cost 6*d.* each. The great secret is to take care not to cut or break in any way the outer crust, for if done the weather speedily gets in. I consider them superior to all other kinds of bordering, and I fancy that many plants, the Asarum, Gentianella, Saxifrages, Veronicas, Campanulas, Sedums, and other dwarf edging plants, show a decided preference for the brick edgings to grow upon or against. There is no difficulty in having them made angular or curved for corners and bends.—W. X. F.

COLOUR AND CONTRAST.

A BOUQUET CRITICISED.

"*R. E.*" is much obliged for the information contained in The Journal of Horticulture, of the 17th, relative to the law of colour and contrast; but at the same time acknowledges himself to be still rather perplexed in the matter. If scarlet is inadmissable with purple, what would Mr. Nesfield say about the oblong beds in the Horticultural Gardens, South Kensington, which branch out in long succession on either side the centre walk, which leads to the large circle in front of the conservatory? "*R. E.*" is willing to admit it may not be according to rule, but there are few rules that have not some exceptions; and if we look at the extreme richness of colour in the beds before mentioned, and which in the perspective form a long mass of scarlet and purple, it must, he thinks, be allowed that the rule which prohibits such an arrangement must be rather precise and unwise. It is true a bed of flowers should not be taken as a model for a bouquet; but it is difficult to understand that if the combination is right in one it should be wrong in the other. With regard to the foliage of the Flower of the Day Geranium in the beds alluded to at Kew, altering the case in any way is also difficult to understand, as the bouquet in question was surrounded with foliage of that Geranium, and giving much the same effect as the beds do. But it is not only in the foliage that the effect is so rich, which is only seen when standing near the beds; but taking about fifty paces away, when the tops of the bloom of the Geranium are seen surrounded by the violet of the Purple King Verbena, the contrast is truly beautiful. It is certainly more correct, perhaps, to mix or place in juxtaposition purple and primrose, or purple and white; and, perhaps, it ought to have been mentioned that one of the eight bouquets which were used in the floral design was of violet Aster, edged with Calceolaria amplexicaulis; the whole of the bouquets being laid on a circular bed of Lycopodium denticulatum more than a yard in diameter, the bright green of which formed a nice groundwork for the flowers. Purple or violet undoubtedly consists of a mixture of red and blue, but when the blue so much predominates as it does in violet, is it a great mistake to place vermilion or scarlet near it? much less a yellow shade of vermilion, which is the shade of the Flower of the Day Geranium. If the colours are separated which compose violet they will be found to be carmine and blue, the former colour having little or no affinity to vermilion. This is a fact, probably, not always considered: hence the confusion caused by the two colours being classed as red. But "*R. E.*" would be greatly obliged to the Editors of The Journal of Horticulture, or any other learned contributor for a little further information on the subject if they would kindly favour him.

[I do not think I could have undertaken to reply to "R. E.'s" question a few days ago, had it been understood to involve any reference to the practice of laying out flower-beds—a practice subject to innumerable modifications and exceptions universally acknowledged to be perfect in its arrangement in the instances "R. E." means, and an arrangement of which the writer cannot speak from experience, never having been able to see those beautiful plans in the gardens mentioned.

"R. E.'s" question referred expressly to "the rule" of colour, and to a *bouquet* arrangement of "violet and cerise." Thinking, of course, that it was a strict question of *rule*, the writer replied by stating that rule certainly to exclude the juxtaposition of the colours named, in which colours every flower painter knows the addition to the cerise of a good deal more blue, and to the blue of a good deal more carmine, would render the cerise violet and the violet cerise. I do not mean to say that they would certainly hit the *exact* shades of the flowers used, but to all intents and purposes for mixing the flowers they would be the same.

"Purple and scarlet," of which "R. E." now speaks broadly, while he also asks if the rule has "no exceptions," may be in two ways admissible. A cold purple approaching to dark blue in its general effect and a yellowish-scarlet would be a striking contrast. But no colour that I can think of is more free from the slightest tinge of blue than is that same scarlet, which cannot be said of *cerise* to the same extent.

Purple or even dark violet and scarlet have again in their use as many exceptions as possible to fall back upon. A regular design of scarlet on a purple ground can be readily conceived to look very striking. Probably in the garden arrangements, which must be so beautiful, the impression is that the purple only enframes the more brilliant colour, and thus it may be considered more as an accessory than as *the* colour of the design.

It strikes me in confirmation of this idea, that in speaking of these designs it is always the bright flower which is mentioned first, the other only as its accessory. Not Flower of the Day, and Purple King, but Flower of the Day edged by Purple King. After all it is possible that "R. E." and myself are writing at cross purposes regarding the use of the terms violet and cerise, purple and scarlet. I define violet as a very warm—*i.e.*, red shade of purple, and cerise as scarlet, one stage advanced towards crimson.

The expression "pale yellow, white, or green, are the only *good* contrasts to a purple flower," refers to those cases, as in the bouquet described by "R. E.," in which the purple and the other flowers are equally *the* colours; not where one is made the mere foil of the other; and the terms purple and red were used in the former reply merely in the idea of including the violet and cerise, supposing there to be a difference in the definition of those colours, while cerise and violet would not have so well embraced the reds and purples generally.

One more point must be mentioned. Is not the effect extremely different of a bright colour framed in a mass of a darker tone and done with, or a dark flower surrounded with bright ones, and then edged with a third colour also very light?

I have given some thought to the subject since receiving "R. E.'s" first letter, and though I do not happen to have the flowers at hand to try, it strikes me that as far as the colours were concerned, a reversal of the design—cerise, or rather pale scarlet centre, variegated band, and purple edge, would have produced more nearly the colour effect of the beds at Kew, and been at the same time correct as to the usual rules of colour. This would not, however, of course, have been a good bouquet. It is very seldom that the same designs can succeed for two such different purposes.

If blue *did* very greatly preponderate in the violet of Purple King Verbena, the scarlet certainly would be more in place. But is it possible that in violet, blue can be said to have more than a slight share in the tint at all?

The other bouquet being correct as to colour, no doubt added greatly to the bad effect of that under discussion.—
—E. A. M.]

PILLAR ROSES FOR NORTH WALES.

MANDEVILLA SUAVEOLENS AN OUT-DOOR PLANT.

Will you give me the names of a few climbing and pillar Roses suitable for north Wales, the situation about four miles from the sea, sheltered, and generally mild? The proof being that Myrtles, Sweet Verbena, and many other greenhouse plants live out all the year round, though the last severe winter has killed many of them to the roots. I cannot help mentioning that the Mandevilla suaveolens, which was trained against the house three years back, has never been the least affected by the seasons; it now reaches to the windows of the second story, and has been in very fine bloom best part of the summer, but I do not observe that it will seed this season which it did the autumn of 1859.—H. A. D.

[The first climbing Rose for that mild climate, the very first where we have heard of in Britain, where Mandevilla lives out the year round, is Isabella Gray, on a south wall, and not to be touched with a knife for the first seven years. You must get one on its own roots. The rest are true and proved. Gloire de Dijon, finest buff yellow. Triomphe de Rennes, splendid canary yellow. Celine Forestier, a flat, pale, yellow flower. Lamarque, all but pure white. Cloth of Gold and Solfaterre, same treatment as Isabella Gray. Fellemberg and Jaune Desprez, very strong. All Noisettes for climbers except Gloire de Dijon, a Tea. The following only for pillars:—*Hybrid Perpetuals.*—Alexandrine Bachmetoff, Anna Alexief, Auguste Mié, Baronne Prevost, Caroline de Sansal, Duchess of Norfolk, Général Jacqueminot, General Simpson, Jules Margottin, Lord Raglan, Leveson Gower or Souvenir de Leveson Gower, Mathurin Regnier, Mrs. Standish, and Oriflamme de St. Louis. *Bourbons.*—Louis Odier, Pierre de St. Cyr, Sir Joseph Paxton, and the Malmaison or Souvenir de la Malmaison.]

Centaurea candissima.—I cannot understand the difficulty of propagating Centaurea candissima. I bought one two years or more since, and in the summer of 1860 turned it out, when it made numbers of side shoots; these I took off and placed under a hand-glass, removing it every night—only two missed. This year, as I wanted a few to give away, and was about leaving home for a time, I earthed up round the stem of one with fine sandy earth, first slightly putting outwards all side shoots; they rooted freely.—H. B.

COMMON PLANTS WITH REMARKABLE FOLIAGE.

(*Continued from page* 380.)

Saxifraga hypnoides, or S. tridactilytes (Moss or Stag-horn-leaved Saxifrage).—This beautiful moss-looking plant is certainly not so much cultivated as it deserves, as I am not acquainted with any plant of the Lycopodium or Selaginella family that looks half so lovely. Close and compact in growth, and of the most inimitable green, which the severest winter scarcely affects, the frost of last season which browned and discoloured all the wild Mosses or Hypnums had no impression on this hardy alpine; and from the middle of July to the end of April it presents a close, compact mass of the densest emerald green, the little cushion-like tufts of thick-set stems resting on each other, with their terminal points all turned upwards. It grows best in rather moist, shady places. Shade, however, is more necessary than moisture, and if planted between stones it speedily overtops them, forming tufts or cushions of the richest possible green, and as an adjunct to the fernery it is indispensable. Neither do I regard it second to any Fern for beauty and interest; its thickly clothed foliage, moulded into something very like a stag-horn shape, will bear inspection with the fronds of any of the larger Ferns, and certainly is more handsome than those of the Hymenophyllum and smaller sorts. It is also easy of culture, spreading over the ground in a compact and not rampant manner. It grows to it as it advances, and these self-layers become excellent plants, growing at any time of year if supplied with shade and moisture to begin with. It, however, dislikes full exposure to the sun, though it will bear an eastern or western aspect, but on a bank facing the south it does not look so well. I had an instance of this the present season. In forming a rustic ornamental bed for bedding plants on the lawn, which was slightly raised and surrounded with rough stones, this Saxifrage was planted as an edging amongst these stones some time in April last, and during the showery weather of the early part of summer grew freely, more especially on the north side; and when dry weather set in the beginning of August, the plants on the south side ceased growing, while those on the north side, though receiving no further shade than occupying the northern slope, continued to grow, and have looked all that could be desired, only the tips of the stones being visible, and these it is not intended to cover. On the south side, though the plants look green, they are much smaller, but may with the autumn rain make up much of their lost position. I am not acquainted with any plant so well adapted for ornamental rockwork as this. The only time in which it is not ornamental—and all plants have this period in their annual duties, and some that are much esteemed have quite eleven months out of the twelve that are so—is the time the plant is forming fresh shoots after flowering, which is from the middle of May to the same time in July, not more than two months, and during that period the flower is far from being uninteresting. A white blossom on a stem 6 inches to 8 inches high, the plant at the time making a sort of wiry growth, is not so pretty; but, as above stated, it is not long in resuming its deep rich green hue, which it retains all the rest of the year, unless it be unduly exposed to an extraordinary glare of long-continued sunshine, when it suffers a little, but as we possess plants better adapted for such sunny quarters this one need not be so exposed. Some of the Sedums like a sunny spot, and many alpine plants will endure that also; but as plants with markable foliage were the subject under notice, we must keep to t matter.

he Globe Artichoke.—It would be difficult to take a wider in the range of vegetable matters than one from the neat humble Saxifrage to the aspiring Artichoke, and in colour y are almost as widely different as if neither of them had any m to one original hue (green). Their purposes are, however, ely different. The Saxifrage may be planted close under the e, and is better of being s. The Artichoke ought to be some istance f m he spectator, i liage being larg and having a sort of exotic aspect looks best at the distance of a quarter of a mile or so, and for giving effect to a shrubbery at the distance here mentioned it is useful. A few plants standing in front of a mass of some common evergreens give it quite an oriental aspect, the foliage being more necessary that way than the flower-heads, although these, as vegetable productions, are singular and interesting. The Globe Artichoke likes a deep, rich, garden soil with a well-drained bottom; and though it is about as hardy as most plants, yet it is sometimes killed by very severe winters, if not protected, which it is easy to do by sticking a little fern or laying some litter around the collar, covering up some of the central shoots, and allowing the outside ones to fall over to act as an additional protection. But as its appearance in winter is not so good as in summer, it ought only to be planted in situations where its summer services are wanted—on the opposite side of a piece of water or inaccessible object, and clothed with evergreens behind it, which look well at all seasons, but are quite cast into the shade by the graceful foliage of the Globe Artichoke waving in the breeze, and every undulation disclosing the silvery whiteness of the under side of its foliage, conveying a tolerably good idea of tropical vegetation, though in itself it may be one of the most common and neglected of plants.—J. Robson.

(*To be continued.*)

MR. BENNETT'S VINES IN POTS AT WORKSOP.

Your correspondent Mr. Bennett is determined to be both judge and jury. The coolness of his letter in your Journal of last week must be most amusing to those who had the opportunity of seeing his Vines, and thus practically knowing the serious discrepancy between the implied meaning of his words and that told by the roots of the Vines.

Probably, the best way of giving you a fair knowledge of the case will be to state the exact measurement of one of the roots—viz., 3 feet 3 inches, hanging from the top of the outside pot; add to this the length from the crockhole of the inside pot to the top of the outside one, which we may fairly state at 18 inches, and we have 4 feet 9 inches. It is to be regretted now that the Vines were not lifted clean out of the outside pot, so as to show the full extent of the roots outside, for the roots may have been much longer than I have mentioned. The insertion of the Judge's hand once brought away four roots.

The crockhole of the outside pot was fastened up with a cork and the space between the pots filled up with roots and water, and the top carefully covered over with moss, so as to hide the inner pot.

One of the rules of the Society printed in the schedule says, that "the decision of the Judges shall be final." Mr. Bennett places himself in a false position when he proposes himself as the judge of the Judges.

Mr. Bennett was present last spring when the rules and the schedule passed the Committee, and he drew numerous very fine distinctions as to the meaning of many phrases; but he entirely forgot to inform his brother Committeemen as to his meaning of Vines in pots.

Why did Mr. Bennett refuse to have a fair statement of the case placed before a competent authority and then send his own *ex parte* statement to him with every question answered by himself?

Every first-class gardener in the district, and there were many of them present at the Show, gave a very decisive and undoubting answer against Mr. Bennett.

Will Mr. Bennett be kind enough to state, for the information of other gardeners, how he is able to keep his so-called tap-root (by which I suppose he means the leading root) within the pot, whilst all the other roots find their way out? and, as he himself strongly objects to the roots going over the top of the pot, is it because his tap-root would go over the top in preference to through the bottom?—J. T. & G.

Having read Mr. Bennett's letter of the 17th inst., relating to pot Vines rooting through the crockhole at the bottom of the pots, and your reply to the same in reference to the Judges' decision, I was highly interested with your conjectures, which I thought admirable, showing well your intimate acquaintance with the subject you had in hand.

Well, in reference to the Vines having any other support than the soil contained in the pots, of that there is not the least doubt, for the Judges having exposed the roots which the outer pot contained (where they were well supplied with moss and water), and placing them carefully over the edge of the same, they were there telling their own tale as to what service they had been to the Grapes, which were so skilfully supported above with iron and timber.

Now, just to give you an idea of the general feeling confirming the Judges' decision, thirteen practical gardeners were called together by the Committee on the ground, to give an opinion as to whether the Judges had justly disqualified Mr. Bennett's Vines or not, and their decision was unanimous (with one exception); for, seeing the fine, healthy roots hanging in profusion from 3 feet to 4 feet long, they could not do otherwise than approve of the manner in which the Judges had so conscientiously and intelligently acquitted themselves by their decision—viz., disqualifying the should-be pot Vines. I think this unfair attempt being detected met its due reward—viz., a multitude of thorns. Myself being a lover of fair play, I forward you the above true statements.—A Grower of Pot Vines.

[The wording of the rule ought to have been more precise. A similar want of precision led to a similar occurrence with Chrysanthemums in pots at a Colchester Show. "For Vines *grown entirely* in pots" would admit of no mistake.—Eds. J. of H.]

GARDEN NOTES.

Wasp-nests.—I think the small can of coal tar "T. R." recommends would not fill many wasp-nests. I destroy them in a much easier way: I take spirits of tar, turpentine, or paraffin oil, whichever comes handiest, pour a little into the hole, stop it with cotton or rag, pour a little on that, and the job is finished—a great improvement on the old plan of powder and sulphur squib, with all the trouble of driving them out.

Tropæolums.—As Mr. Robson invites communications about Tropæolums, I beg to say that I have a seedling of the Stamfordianum breed which has done good service as ribbon-rows. It is a good scarlet, and with a considerable amount of disleafing it is superior to scarlet Geraniums. It does better in a bed, as it sooner exhausts the soil, and does not go so much to leaf. The wet season we have had in the north has made it grow rather luxuriant.

Diplotaxis tenuifolia variegata.—Many and various are the variegated plants that are made use of as ribbon-rows and edgings to beds, but amongst all the reports of the most celebrated places I have never seen this mentioned as being made use of. I therefore beg leave to call attention to it, as it makes a very good edging about 9 inches in height—some think equal to Golden Chain Geranium; and as it is very hardy, and easily propagated in spring, it is, therefore, in my opinion, worth the attention of all who have a great amount of edging to do, and also a demand for variety. The flowers are insignificant, but it is easily kept in order by cutting them off.—A. K.

SCHIZANTHUS CULTURE IN POTS.

The Schizanthus is undoubtedly a charming thing when grown with an ordinary amount of care for the decoration of the conservatory in the early summer months. It is one of those annuals that never fail to obtain the admiration of all, when cultivated in pots.

To do this successfully seeds should be sown at once in a gentle hotbed if one is at hand; if not, in a close cold frame. Here the seeds will soon germinate. Keep the seedlings moderately moist, but avoid damp. As soon as large enough place them singly in small pots, and encourage them to grow as much as the season and state of the weather will permit till the end of November, when they may be removed to the cool greenhouse.

Here they will require some little attention, as they are at this season liable to suffer from damp. Water sufficiently to keep them from flagging is all they require from the time of their admission to the greenhouse till the end of February, at which time they will show appearances of growing. Then is the time to give them a shift—say from a sixty to a forty-eight-sized pot, using compost thoroughly pulverised, but which should be both light and rich.

After shifting, the plants would be benefited if they could be placed in a higher temperature till they can form fresh roots in the new soil, but not longer; for if allowed to remain in such a growing state they would soon get weak. A steady, robust growth is more to be desired than the flimsy, long-jointed growth which must follow from the excitement of a higher temperature.

Having brought them back to the greenhouse, the best treatment to give them is precisely the same as you give your Pelargoniums. Two more shifts will make them fit objects of adornment for any conservatory as a single or specimen plant. For general purposes at this season they will be found to be highly valuable also, affording a very agreeable change both in colour and character.

In conclusion I must add, these remarks are only applicable to the taller-growing kinds, as the others are not so well adapted for pot culture. The varieties I grow are, Hookeri, pinnatus, and pinnatus Prestii.—J. C. Clarke, *Wakehurst Place.*

POMOLOGICAL GLEANINGS.

Strawberries.—Is the well-advertised Strawberry General Havelock the same as the old French sort Cremont at one time advertised as a "perpetual Strawberry" by a Bath grower? I observe that Mr. Nicholson queries this in his catalogue. Is Rival Queen the same as Omar Pacha and Myatt's Eliza, as stated by the author of the "Fruit Manual," and by all the growers? The question is, Who is the person that renames these things? If done for the purposes of trade he should be inquired for and exposed.—Hautbois.

Seedling Strawberries.—I have a plot of ground about 20 feet square devoted to a batch of seedling Strawberries raised from seed in 1859. This year every plant bore fruit, and a most interesting employment it was during last July to look at and taste the numerous varieties, for no two were alike; and amongst some hundreds of plants scarcely a very inferior kind could be found. They were raised from two or three good varieties, hybridised with the hope of procuring something very early or very late; for we have enough mid-season varieties and plenty to spare. I believe that I could have found among my seedlings at least one hundred varieties which, well described, would have formed a very respectable catalogue. The wonderful, the unlimited variations that Nature, assisted by man, gives is to me more mysterious—more beyond our "ken" than ever. Allow me to illustrate this proposition. Take one large ripe fruit of a British Queen Strawberry, squeeze it quite flat so that its pulp will spread over a surface equal to a breakfast-cup. Place the pulp thus spread out on the surface of some mould in a flower-pot; take some fine mould, and sprinkle over it till it is covered to about one-eighth of an inch thick; cover the pot with a piece of wire, so as to admit moisture but keep the seed from injury by mice or birds. The following spring, about the month of April, your young Strawberry plants will make their appearance. You will probably raise from your single large Strawberry a hundred plants. The most marvellous thing is that not one of these young plants will be like its parent the British Queen, and *no two exactly alike*.—T. R.

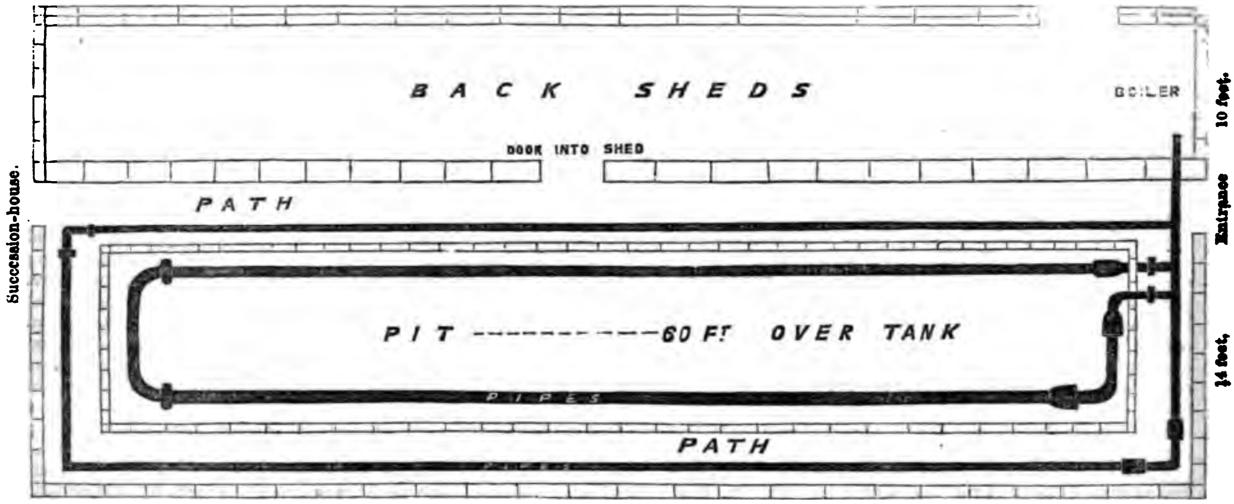
PINE APPLE CULTURE.

The Pine Apple has been denominated the "King of Fruits," and I think justly so, whether we consider its qualities in reference to its wholesomeness, its agreeable rich flavour, or its size: in all these qualities it is equal to, and in some superior to any other known fruit. In regard to its being good for food, the only drawback I ever heard of was, that, eaten in large quantities, it was astringent—a quality in hot climates rather of advantage than otherwise. In rich, aromatic, agreeable juice I know no fruit that is equal to it. I remember some twenty-five years ago, when I had the charge of the extensive range of pineries at Horsforth Hall, in Yorkshire, exhibiting some large Providence Pines at an exhibition at Leeds. The Rev. James Armitage Rhodes, my employer, was chairman; and on my being called up to receive the head prize for Pines (that was the fashion there then), he ordered me to cut them into slices and distribute them amongst the company. In cutting them I found the juice so abundant as to fill the large dish with it: this juice was of a rich amber colour, and very aromatic and refreshing to the palate; no Melons, Peaches, Apricots, &c., would have yielded so much juice. The last quality size in the Pine Apple is A1, no other eatable fruit approaching it. I have grown it from 8 lbs.

to 10 lbs. weight. My old friend, Mr. Mills, grew one in a pit at Gunnersbury 15 lbs. weight; and there is this advantage—that the larger the kind is grown the higher flavoured it will be. I do not know to what weight they are grown in their native country; but if we may judge by the specimens imported from the West Indies, we grow them much larger in our hothouses than they are ever seen in tropical countries. It is very likely, however, that the gardeners there pay but little attention to the culture of the Pine Apple to obtain heavy fruit; in that quality our best gardeners have, within ten or fifteen years, greatly improved. It is no unusual thing now to find Queen Pines fully 7 lbs. or even 8 lbs. weight.

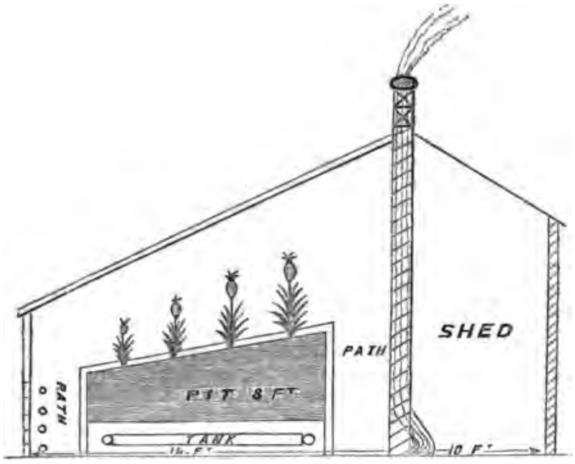
In other points the culture of the Pine Apple has improved much since the days when I was a lad in gardens, and that is the fruiting them in less time. Loudon describes the Pine as a triennial plant—that is, producing fruit when three years old; but since he published that we manage to fruit our Pines in half that time. It is a fact that I have known Antigua Pines grown for six years and never fruited. Any good Pine grower now would think that fact incredible. The reason why Pines do not fruit I will give hereafter. Another modern improvement is in the size of the pineries; generally they are not so large nor so lofty as formerly. Reflecting upon these points and some others I have taken up my pen with the intention of writing down my experience in Pine Apple culture, and embodying with it every point of modern culture worthy of imitation. As there is nothing like order, I intend to divide my subject into—1st, the best kind of houses for Pine culture; 2nd, list of the most esteemed varieties; 3rd, the best kind of soil; 4th, watering, which includes syringing and atmospheric moisture; then 5th, summer culture; 6th, winter culture; 7th, propagation, including by crowns, by suckers, and by seeds; and lastly, insects that feed on this plant, and the modes of destroying them. Many of these sections will be subdivided so as to be more intelligible.

I conclude these preliminary remarks by observing, that I write this essay on Pine culture, supposing that my readers are desirous of full and minute directions on every point of culture. In a great measure my instructions will be superfluous to such of my brethren as are well acquainted with, and in full practice of, the best modes of cultivating this noble fruit. To the beginner and young gardener I do hope my observations and instructions may be of some service. If any such growers are benefited by my remarks I shall not think my labour in vain.



Houses for Pines, Usually Termed Pineries.—To cultivate the Pine Apple to the highest perfection, three houses are advisable. One for the youngest plants—viz., crowns and suckers; another to grow the plants a stage further till they are fit to fruit; and lastly, the fruiting-house. Unless a large number of young Pine plants are wanted for sale or exchange, the first house need not be above half the size of the other two. Many good growers place their suckers and crowns in a pit or a deep large frame, the heat for which is obtained and kept up by linings of dung. For small places such a mode may be of service; but where expense at first in erecting the best houses for Pine Apples is not a consideration, I recommend good brick erections for all stages, with walls all round, in order that every plant may be constantly in sight in all weathers and seasons. It is obvious that when so arranged greater facility is given for every operation—such as watering, steaming, removing for repotting, and so forth. For convenience, I am decidedly of opinion that the pineries should be all in one range with glass divisions and widish doors, so that the plants when large enough may be moved from one house to another without breaking the leaves. A large and commodious warm shed behind is indispensable for the purpose of repotting the plants, and to be spacious enough to hold all the plants of at least one of the houses, whilst the renewal of the pit in which they are to be plunged or planted out is effected. As the pits inside the houses are of similar form, whether the plunging or planting-out system is adopted, I need not in this place consider which of the two plans is the best. The form of the house is of some consequence. From all that I have observed on this point, I have come to the conclusion that what is called lean-to houses are the best for the growth of the Pine Apple. The advantages of this method above span-roofed houses [illegible] Economy [illegible] fuel [illegible] evident that [illegible] solid [illegible] wall on the north side of a lean-to house will keep more heat in than a glass wall, and, consequently, there will be less heating power required to keep up the internal atmosphere to its proper height. 2nd, The roof of a lean-to house may be at a lower angle, and, consequently, the pit may be nearly level, the plants will then be all at an equal distance from the glass. 3rd, The plants in such a house occupy the best position for growth. In a span-roof the walk generally is in the centre on account of head-room: hence the best space for plants is wasted. Whereas in a lean-to the back walk may be slated, and then all the glazed part will be occupied by the plants. Lastly, When the plants require potting they are easily carried into the warm shed behind a lean-to house; whereas in a span-roof they must necessarily be exposed to the external cold whilst being carried to the potting-shed.

Size of the Houses.—To produce about one hundred fruits annually, I have calculated that the houses should be respectively —fruiting-house, 60 feet; succession-house, 46 feet; and nursing-house, 30 feet. The width of them all to be equal—that is, 14 feet. That will give 8 feet in width to the pits, and 3 feet each to the paths, which should run all round. Each house to be separated by a glass partition and glass doors. The nursing-house pit will necessarily be shortened in length by the cross wall: hence I set it down as 26 feet in length. As the plants will be small at this stage, 1 foot apart in the row and five rows longitudinally will give ample space for 130 plants. It is better to have a few too many for fear of accidents or failures. In the succession-house there will be no cross walk: hence we have the whole space occupied by the pit 46 feet long; and as the plants will, when brought into it, be much larger, I plunge them at 1½ foot apart, and put them in four rows, which give the number to fill it, 184. In this pit they remain till they are fit for the fruiting-house; and as I expect they will then be large and in large pots, and the pit is 56 feet in length, being shortened about 4 feet by the end cross-walk and end wall in this their last home, I allow them fully 2 feet in the row from plant to plant, which gives me twenty-eight in a row, and four rows, of course, gives 112 fruiting plants, and if all goes on well will produce that number of fruits.



Ground Plan and Section of a Fruiting Pine Stove, 60 feet long and 14 feet wide, heated by hot-water pipes.

Some of my readers may think that number not sufficient for a range of houses 45 yards long, but if the number is less the weight will be more. Nothing is gained by growing Pine Apple plants too thick. There ought always to be sufficient space for the leaves to have full exposure to the light. They are then stout and broad and able to bear their own weight when moved; whereas, when grown very thick the leaves are long, thin, and weak, or, in other words, they are what is called drawn—something like seedling Cabbages when allowed to stand too long in the seed-bed. Every grower of that useful esculent knows that if his Cabbages are not planted out at least half a yard apart the heads will be small and almost worthless. So it is with Pine plants grown too thick in the pits, whether in a nursing, succession, or fruiting stage.

Heating.—On this point I believe all growers of the Pine Apple agree that there is no mode equal to that of a well-arranged system of hot-water pipes, either alone or in conjunction with smoke-flues. I think it is a pity to allow all the heat from the fire under the boiler to waste its power in the open air out of the chimney top. My plan is to have hot-water pipes in sufficient quantity running across one end, on the front, across the other end, and returning the same way to the boiler. The smoke from the fire I conduct in a flue in the back wall, returning back once, and then again to the chimney. By the time it reaches the chimney the heat will be pretty nearly given out. By heating this wall it not only warms the house in part, but also the potting-shed behind.

There are various kinds of boilers for heating the water to circulate in the pipes. Tubular boilers, multitubular boilers, cannon boilers, and what not; but of all the shapes and forms give me a good saddle boiler. It is the cheapest and best, simple in form, and easily set and heated, holding enough fuel to last through the longest night. The pipes containing the water should be neither more nor less than 4 inches diameter, and there should be four in number, two ascending, and two descending, and as the seasons vary the pipes could be used accordingly—that is, one pair might rk in mild weather, and the whole four in severe frost. This t be easily managed by having a stop-cock to one or both pairs of pipes.

ING THE PITS FOR BOTTOM HEAT.—The common is to fill the pits with spent tanner's bark, and when managed no better material can be found; but when tan is used it should never be thrown into the pits direct from the tanyard, especially if fresh taken out of the tanner's pits. It should be carted home and laid in a heap either under a shed, or, if in the open air, covered with something that will turn rain off it. In this state it should remain till all the superfluous water has run from it, and a fermentation has commenced, then it is ready to be placed in the pit inside the house, and then allowed to become warm before the plants are plunged in it. This refers, of course, to the pits of a new range of houses being filled for the first time. Afterwards the best of the old bark may be preserved and put up on the top of the new whenever the heat requires to be renewed.—T. Appleby.

(*To be continued.*)

THE OSAGE ORANGE.

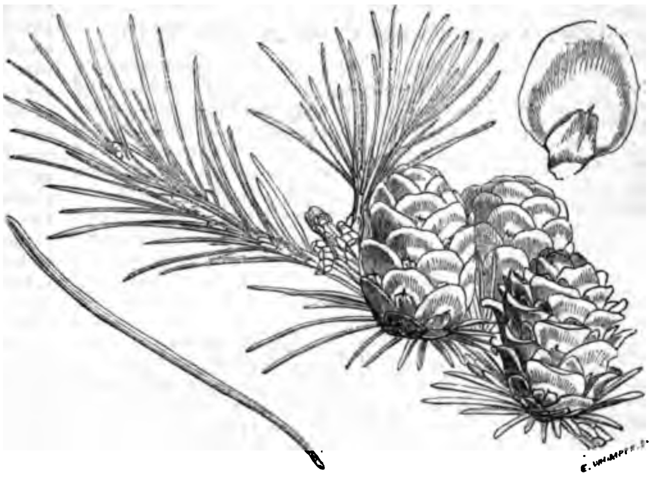
The only method of bringing this tree into a bearing state would be to place it in a 13-inch pot in an orchard-house, not allowing it to root through, but starving it into fruitfulness, always remembering that the fruit, although like an Orange, like the Apple of Sodom, is dry and utterly uneatable. It does not come from South America, as stated by your correspondent, page 496, but from North America. It is perfectly hardy. I have a hedge 170 yards long growing in a sandy soil. This was planted in the spring of 1858, and was killed down to within a foot of the ground last winter owing to the shoots being quite unripe. In the winter of 1859 not a shoot was touched, they were ripened by the preceding warm summer.—T. R.

THE ONLY KNOWN USE OF CRINOLINE.

The fruit trees in my orchard-house have been much blighted this year, the tops of the young shoots curl up. I have, I think, destroyed the fly now. Not being able to smoke the house in the ordinary way, I have used a lady's crinoline. I bought a cheap one covered with glazed calico, pulled it up round a pole, making it as close as possible. It is just the size to cover one of Mr. Rivers' miniature trees. I use Gidney's Fumigator, and leave on the crinoline till the next morning, I then syringe the trees. The fly has no chance against the tobacco in so small a space, and the tree does not appear the worse.—Kate.

NEW PLANTS FROM JAPAN.

Abies microsperma. *Lindl.*



Among the Conifers sent home by Mr. J. G. Veitch is one which, on account of the unusual smallness of its seeds, Dr. Lindley has named *microsperma.*

Mr. Veitch characterises it as a tree from 40 feet to 50 feet high, with foliage resembling the Spruce Fir in point of colour, and very glaucous on the under surface. The leaves are as long as those of A. amabilis, and perfectly silvery underneath. It was at Hakodadi.

TIMBER FOR STOVE AND GREENHOUSE BUILDING.

In reference to what is said in your last Volume, page 460, let me state that I have some railing of pitch Pine which has been out of doors for at least forty years, and is now quite sound. It may have had three or four coats of paint during the period. There has been no exudation of resin more than is common to most Pine timber.

The resin which exudes from such when exposed to the sun is not what pervades the wood as in pitch Pine, but that which has accumulated from the effects of injury or disease during the growth of the tree—*e.g.*, at knots, which are the ends of dead branches overgrown by the stem, and where the bark has been injured.

I am not aware that pitch Pine has any affinity for dry rot more than Oak. I have always considered it induced by circumstances independent of the nature of the timber.

There can be no doubt about the value of good red deal for the above or any out-door purpose (for which it is suitable) out of the ground. Pitch Pine will stand the ground almost as well as Oak.—K.

As I see in your last Number that a correspondent's inquiries about the varieties of wood fit for plant-house building have not been answered satisfactorily, I beg to offer a few remarks.

In a specification good red deal means nothing; if Baltic is added it is a different affair. We must condemn all American timber, although the carpenter will say it works so easily and takes such a good face. Gottenberg yellow deal is, although lasting, to be rejected; as a sash-bar it will twist till it strains the glass, and then the first frost breaks it. Memel does not come so good as it used to do, but more like white timber. Dantzic, although rather hard to work, will outlast any fir I have seen. Of course, no one would think of working sap; if it is objected to as being difficult to cut into small sash-bars, Orega or Petersburg are both good and fine. When pocket money was short I sat down to work and made some pit-lights, twenty years since, and they are, with the exception of the bottom of two sash-bars, as good as new. Mr. Robson's objection to Oak will be overcome if the plank is well seasoned before being cut, three-inch plank will take quite twelve months.

I think it a good plan to thickly smear the tenons of sashes with good white lead when they are put together. Carpenters are too fond of narrow rabbets in their bars. They are little trouble and look neat; but the glazier has to cut in the glass very light, and much mischief consequently arises.—H. B.

HEATING A VINERY BY A PIPE-FLUE.

I am thinking of heating a vinery so as to give some assistance to the ripening of the Grapes, and to secure my bedding stuff from frost. My house is 33½ feet long and 13 feet wide, 9½ feet high at back, and 3½ feet at front. I am anxious to know if glazed or terra cotta pipes of six-inch bore would answer for a flue, by having 8 feet or 9 feet of brick flue nearest the furnace, as cheapness is a great object, provided it is permanent. I purpose having the furnace at the back of the house at one end, and to bring the flue under the floor, by the door, then along the front, and return by the back to the chimney at the furnace. I have a walk sunk 18 inches deep and 2 feet wide, within 3 feet of the front of the house. Should I bring the pipes (if they answer) along either the walls of this walk, or could I bring them along the floor near the centre of the house, and make them useful for bottom heat if I build a pit in my house? I shall be most thankful, if you think the pipes sufficiently strong to resist the heat, if you say what is the best material to use at the joints to staunch them, and if they can conveniently be cleansed of soot, &c., and if it is necessary to sink the furnace lower than the flue at the doorway. I know the return-flue should be higher than the furnace.—Kate.

[We have not had much experience in earthenware pipes, [illegible] have seen them answer. The greatest difficulty is in getting [illegible] cement to adhere properly to the joints, which it is unwilling [illegible] a glazed surface. But six-inch pipes will not do; [illegible] nine-inch, or even a foot would be better; and the ends, [illegible] least the angle turnings, had better be brickwork; and so arrange [illegible] off and [illegible] the whole length o[illegible] [illegible] houses each 36 feet long, heated in this manner, the pipes being Portland cement, and 1 foot in diameter. If you run your flue first along the front wall and return it at the end, and close along the back wall, you will have room in the centre for a bed about 5 feet wide, which being filled with fermenting material will help to heat the house, and be of great service to the Vines, and will be of infinite service in supplying heat to bedding plants wanting to be forced on. In the early part of winter it would be better not to have much bottom heat, the drier heat being more useful in preserving plants; but by the middle or end of January you may begin to force if you want to increase your bedding stuff to any great extent, and from then up to the end of April your house, paths, and all, will likely be crowded. If you have good-fitting earthenware pipes, perhaps white lead would make as good a joint as anything; but cement may be tried. As pipes of twelve-inch diameter of Portland cement only cost some 1*s.* 6*d.* per foot run, and the joints require very little setting, this will perhaps be as cheap as anything. When you first light a fire in a house heated by a flue, let some of the ventilators be open, as there is always an offensive vapour arising from a flue when the fire is first lit, and perhaps an escape of smoke from even the best-managed. It is certainly better for the fireplace to be lower than any portion of the flue; but the flue may dip gradually at a doorway, or any other place in its course. Avoid abrupt turnings, and as the smoke rolls along the upper side of the flue let there be no obstruction, such as a direct perpendicular descent, in its course. Attention to these little matters will insure success.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

As the summer crops are removed, manure and dig or trench the ground before the autumnal rains set in; in stiff soils this is of the greatest importance. Weeds at this season are very troublesome if any have been allowed to drop their seeds during the summer. The autumn-sown crops must be kept clear of them, or they will be soon overrun by them. Remove or dig in all decayed leaves, and all litter that affords harbour for slugs. *Artichokes*, cut down the flower-stems of the late plantations as soon as done with, and keep the plants free from decayed leaves. *Cabbage*, continue to plant out the main crops. Keep the late seed-beds free from weeds. *Capsicums*, the green pods of the large to be gathered if there are any apprehensions of frost. *Carrots*, slightly thin the autumn sowing, and keep them free from weeds. As soon as the main crops are full grown they should be taken up. *Cauliflowers*, continue to prick out the young plants under hand-glasses and in frames. A few may be potted in small pots and placed in a frame where they can have an abundance of air and light, and be protected from excessive wet. *Celery*, a few rows of that which is required for immediate use to be earthed up to the full extent of the leaves. It should at all times be thoroughly dry before earthing, or it will soon rot. *Lettuce*, plant some of the Cabbage kind for winter use into frames as they become unoccupied. The soil in which they are planted to be very light; but little air to be given until the plants begin to grow. Prick out on a warm border some of the Cos kinds, previous to planting them where they are to remain through the winter. *Mushrooms*, keep the out-door beds protected from heavy rains by a good covering of litter. Maintain a regular degree of heat in houses containing beds, and guard against dryness. *Onions*, slightly thin the autumn sowing when they are a few inches high. Immediately the main summer crops are done growing, pull them up and house them when dry. *Parsley*, cut down a portion of the spring sown, so that it may shoot again before winter. Pot some good roots to place in any warm house for furnishing a supply during severe weather. *Potatoes*, continue to take up the crops as they reach maturity. Sort them before they are housed, as it will save much future trouble and waste. *Radishes*, slightly thin the late sowings of the Spanish sorts. If a succession of the common sorts is required, a sowing should be made in a frame. *Spinach*, thin the winter crop, leaving the plants about 9 inches from each other. Keep them free from weeds. *Tomatoes*, should there [illegible] any apprehensions of a frost, the unripe fruit to be cut [illegible] placed in some dry warm place to ripen. Fresh plantatio[illegible] *Cabbages* and *Lettuce* should be frequently examined, [illegible] that droop without an apparent cause should be exam[illegible] if [illegible] roots, there very probably a grub will be found.

not destroyed, will continue its ravages. Earth up the plantations of *Broccoli*, as they will now be growing rapidly.

FLOWER GARDEN.

This season has been most auspicious for the flower garden. The masses of colour still retain some brilliancy, and but for the falling of the leaves we might deceive ourselves into the impression that the summer was not yet over; but, alas! for the transient nature of all sublunary things! in a few more nights we may be visited by a frost which will lay prostrate the glories of our gardens. As there are many plants of which it will be desirable to preserve some of the old stock for blooming next year, it will be prudent to pot them as soon as possible, and to place them in a gentle bottom heat, or in a close pit, until they are somewhat established in their pots. Look over the arrangement of your beds, and mark and learn the errors of commission and omission. Secure what is good to add to next year's display, but remember that novelty and excellence do not always go hand in hand.

FRUIT GARDEN.

The fruit on the trees to be looked over frequently, and to be gathered as it becomes fit; for if left to get over-ripe it is liable to be blown down and bruised when high winds occur. As some decaying fruit is generally to be found for a few weeks after being stored, it is advisable to look over them occasionally, and to remove such fruit. Where it is intended to plant any fruit trees this season, the ground should be prepared at the earliest opportunity, and any fresh soil to be used for planting should be thoroughly exposed to the action of the weather, so as to have it in a mellow state when wanted for use.

GREENHOUSE AND CONSERVATORY.

Where there are many stove plants in the conservatory, it will be necessary, if the weather is cold and wet, to use a little fire heat; but it is necessary to be as sparing of this as possible, especially if there are other things in the house likely to be injured by being kept too warm. Use weak manure water for Salvia splendens and gesneræflora so as to preserve the plants in a vigorous state, and to keep them blooming as long as possible. The Chinese Chrysanthemums will shortly give a feature to the general display. Large plants may be taken up in showery weather, potted, and kept in a close frame or pit for a week or two, when they will flower equally well with others.

PITS AND FRAMES.

Continue to afford the young stock in these structures careful attention, and endeavour to get it well rooted and strong without keeping it so close or warm as to render it sappy and liable to damp off on the first approach of winterly weather, as is often the case with stock got up late in autumn, and then stored away in cold pits for the winter. Admit air freely, therefore, to all plants that are rooted sufficiently to bear it without flagging. Newly-potted off plants to be placed on a gentle bottom heat to encourage the formation of roots, but sufficient air to be given to prevent anything like weakly growth. Cuttings of Scarlet Geraniums, &c., may be still put in where it is considered that the stock of these is likely to be deficient. Secure as many cuttings as possible of any scarce plants which it is desirable to increase, while there is a fair chance of rooting them.

W. KEANE.

DOINGS OF THE LAST WEEK.

CABBAGES.

TRENCHING up ground where the main crop of Onions had grown, adding a little light manure to the surface, forking it in, and after rolling the ground with a light wooden roller, to break the knots of soil, and prevent potching with the feet, planting out the main crop of Cabbage for next spring and early summer, using chiefly the Matchless for this purpose, as giving early heads and a large return in little room. Watered when planted, and dusted round the plants with soot and lime, to prevent any slugs remaining having a pleasant nibble at the sweet young plants. The rolling of the ground as above specified having also some reference to these slimy gentry, as without compressing the ground much, the refuges which they so much like under clods are much lessened; and if picking them up in a morning or evening, or trapping with Lettuce leaves, or enticing with brewers' grains are resorted to, they may also get these alluring morsels more easily without touching the young plants in their route.

A great ado all this truly, about common Cabbages; but to have Cabbages when wanted, even such common things need attention, as a good many found to their cost last season, when there was a deficiency of these Cabbages when wanted. We will plant some more a month later, in order that if the winter should be very severe, and the frost very early, they may escape from being in a slightly decayed state, when those planted out now might suffer from being so full of juice and growing freely.

GENERAL KITCHEN-GARDEN WORK.

Planted out also Lettuces and Endives in open ground, and in turf pits where a little protection could be given them. Cleared away all Peas that no more gathering could be got from. Putting past those valuable sorts that had any pods nearly ripe, to be thrashed out on a wet day, and digging the ground and filling with useful autumn and winter crops, so that no space should be empty, and, besides, few things give a garden a more woebegone, careless, unsightly appearance than rows or quarters of decaying crops of Peas. As unlike our neighbours in Ireland, and some parts of England and Scotland, we have had few downcomes of rain that would thoroughly drench the crops. Watered Celery effectually, and when soaked in put on an inch or so of soil to keep the moisture in, and earthed up a little more for succession for table, giving that previously an extra watering, and in order to keep the heads sweet and clean placed a few ashes close to the stems. Gathered more Tomatoes, pickling Cucumbers, &c., regulated the latter a little, and Vegetable Marrows, top-dressing those Cucumber plants in pots that are to have a little heat when needed, and went through the old Cabbage-quarters, removing all split Cabbages that nobody cares about now, and all decayed and decaying leaves to the rubbish-heap, where with short grass and refuse from the potting-bench, and pickings from flower-beds, a rare manure-heap will be formed, and the heat generated will be enough to destroy all seed weeds. Hoed and forked such ground, as it could be best managed, and run the Dutch hoe through the kitchen garden, as moist days may now be expected, and it is much easier to get rid of weeds when they are six lines in height, or almost imperceptible, than when they are 6 inches, to say nothing of 6 feet, to which height some fanciful people allow them to rise before they think them big and gigantic enough to be worthy of combating with their destructive skill.

STRAWBERRY-BEDS.

Got through the Strawberry-beds at last—it should have been done earlier, but better late than never. All runners were removed from plants put out this last season—say March and onwards. In addition to that, older plants rising two and three years old were thinned out a little, the smaller buds being removed and the strongest and boldest left and all the leaves attached to them, which leaves are beginning to brown sooner this season than usual, showing signs of ripeness of bud and an early winter. Plants so thinned will bear well a great many years, and hardly ever wear out if furnished with top-dressing every winter. Our usual time, however, is to take three years, chiefly that we may bring on our ground for rotation of crops, as Carrots, &c., dearly like to follow deep-trenched Strawberry-beds, and all the Cabbage tribe like to follow Onions. We follow the above course with our Strawberries, because our ground is close and stiff and rather cold, and we should lose and not gain anything by removing any leaves from the plants left. When thus cleared, the ground was forked slightly on the surface, and when convenient we will pull some fresh soil to the crowns, and place some rough manure between the rows. Whilst under such circumstances we would consider the cutting or mowing off the leaves of a Strawberry-quarter as an act of barbarism, we would not consider such practice so thoroughly outrageous as some cotemporaries affirm under ordinary circumstances. We have seen Strawberry plants attain a large size in rich, light soil; and in a dry summer the leaves will be browned by August and yield nothing to the ripening and swelling of the buds. In such a case we would not hesitate to clear the rows of most of their leaves as soon as the fruit was gathered and runners secured, and if either a good watering or a good mulching could be given, we should expect to have nice green leaves close to the ground, and fine plump buds before winter, instead of brown, dried-up foliage waving in the breeze, and starved little pin-headed buds at their base. In one word, we have seen cases where a scythe judiciously used, kept high enough above the buds, might be a very proper weapon to use however barbarous; but in most good Strawberry soils, consisting of strong loam with a touch of the adhesiveness of clay to give it compactness, anything like the cutting down of the foliage by scythe or otherwise, must not be thought of, if fine continuous crops are desirable. The circumstances of the case must regulate our practice, rather than the sweeping assertions of authorities however otherwise trustworthy. No authority ought ever to lessen the necessity for thinking and considering for ourselves.

Went over a second time Strawberry plants in pots, removing every vestige of a weed, and every mite of a runner, and using manure water when any is necessary; and as now the dews are getting heavy, have placed a pinch of soot over the surface of each pot that the virtue may be washed in, and in a few days will give each plant a pinch of guano. These plants were very small when potted, but they are now large enough to my fancy, with bold buds standing above rather than below the rims of the pots, and the soil almost as firm as a brick being so full with roots. Ere long all attempts at mere growth must be relinquished, and October must chiefly be devoted to ripening the buds by giving all the sun possible, and allowing no more water than will keep the leaves from flagging, and for that little will be needed. For want of better arrangements the pots should soon be laid on their broad sides in heavy showers, as it will be easier to water than to keep them dry.

FRUIT GARDEN.

Went over all fruit trees, as dwarf bushes and standards, removing laterals, breastwood, shortening shoots, and even cutting leaves in two of Peaches getting a little too strong, to arrest growth and assist the maturation; and for this purpose all fruit trees in pots, as Peaches, Apricots, &c., under glass, will have little water, and all the sun possible, whilst to give the sun more power the air will now be diminished to a point of safety in all sunny days. Only let us get such wood as hard as Oak twigs and no danger of having plenty of bloom-buds. A few *Figs* in the open air have been dressed, to allow of this sun action. Our crop this season has been scanty, though the individual fruits were good; but this is of less consequence, as the second crop in the Fig-house is producing abundantly, though the fruit are not so fine as in the first crop. Some plants in pots in a cold house will have to be moved to a warmer place to perfect their fruit. Some of them are the *Singleton*, which came out lately as a new, white, small Fig; though now having grown it, I find it the same as I discarded years ago, partly because I had too much of it, having the name of Bacifico and some other aliases, and which has been grown for some generations at Brockett Hall, in Hertfordshire. It is a fine, splendid, small, white Fig, and I understand Mr. Ruffit, the able gardener there, succeeds in having fruit from it almost continuously—at least as with other kinds he gets a good first crop, whilst in my case and that of some other friends, we have mainly to content ourselves with a second crop, the first crop having such a tendency to drop when very small. Any hint on this subject would be desirable.

ROADS AND WALKS.

Cleaned the sides of carriage roads that there might be neatness outside as well as inside; swept and rolled the walks, that they might be smooth and easy for the feet as well as nice to look at, as I think a piece of lawn quite as useful to walk on, and far more pleasant to look at than a walk rough with worm-heaps, and so green that really you can hardly make out whether it was intended for gravel or lawn. In this, as well as many other matters, well done is easy done. There is hardly a place of any size where the walks are not far too numerous. Walk-making, merely for walk-making, has been a perfect frenzy, and altogether apart from neatness or utility. In some fine places you may stand and count numbers of them within the reach of your vision, when one or two would serve all the purposes. That makes walks an indispensable evil; for, in fine scenery, even a fine walk, or a fine road, is such a break up as to be in itself an evil, and only to be allowed when kept nice, and its seen utility and necessity demonstrated. As the walk-making time is now approaching, [illegible] readers will do well to consider how they can keep those they have in the best possible condition, instead of increasing their number, or allowing some to remain as so many shallow ditches for carrying off the surface water in the neighbourhood.

[illegible]

Fresh [illegible] conservatory, [illegible] everything [illegible] and repotted [illegible] Calceolarias, Geraniums and [illegible] and top-dressed hard-wooded plants previously to housing them ere long. Repotted also Chinese and other Primulas, tied out young Pelargoniums, picked over the flower-beds, which, especially the Calceolarias lately so fine, suffered much from the storm of Sunday, and continued propagating bedding plants as much as could be got at, placing them in cold pits and frames that they might not be drawn weakly. We noticed two or three friends trying Golden Chain in heat. We hope they may succeed. It does best struck cool and airy with us at this season. In spring it strikes well in heat, though in the early part of the season we like to strike Cineraria maritima, as already detailed, yet in case the frost should be again severe in winter, we have put in some cuttings, and will secure some of the old roots. We notice that last week's seedlings of the above are recommended as the best. They certainly occasion far less trouble, but they are anything but best. I have some 500 feet of them, but you can detect a plant raised from a cutting ever so far off among them. My impression is, that the plants require two or three years to get their nice white colour. The seedlings have a dull, greyish appearance, instead of the rich silver white appearance of those raised from cuttings. Seedlings, however, are good, though not best.—R. F.

TRADE LISTS RECEIVED.

Descriptive Catalogue of a Selection of Roses, by William Paul, Cheshunt Nurseries, Waltham Cross.—Mr. William Paul has long been known as one of the great Rose authorities, and we have in this catalogue a description of the Roses in his collection, which appears to be not only a large but also a select one.

Descriptive Catalogue of a Selection of Roses, by Paul & Son, Old Nurseries, Cheshunt.—This is an excellent descriptive catalogue, and contains a very complete collation of all the best Roses in cultivation.

A Catalogue of Bulbs and New Plants, by James S. Pike, Winchmore Hill.—This is a good selection of all the choicest new things in the way of florists' and general nursery stock.

Godwin & Son's Abridged Catalogue of Fruit Trees and General Nursery Stock, Ashbourne, is a small pamphlet of ten pages.

A Catalogue of Foreign and Native Grape Vines, by Wm. R. Prince & Co., Flushing, near New York.—In this catalogue we have a record of the names of 344 varieties of Vines, of which 243 are native American sorts whose qualities have been fully proved. What the merits and characters of these 243 kinds are we should be glad to know; but if they are *all* possessed of the characteristic foxy flavour, there cannot be much room for variety. We should like to know something more about these American Grapes.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications.

We cannot reply privately to any communication unless under very special circumstances.

Vinery (*An old Subscriber, Brighton*).—In converting your greenhouse into a grapery, plant the Vines opposite the rafters inside. The two White Grapes to grow with your eight Black Hamburghs had better be one Royal Muscadine and one Buckland Sweetwater. You do not state your subsoil, but the border must be nearly 2 feet deep and well drained. If you refer to our No. 13, page 178, N.S., you will find full directions for making the border.

Spiders on Cucumber Leaf (*Cucumis*).—The gardener was quite correct, they have nothing to do with your miserably afflicted Cucumber leaves. They are swarming with *red spider*. The air of the frames has been kept too dry. Syringing *under* the leaves with sulphur mixed in soapsuds will be your only remedy.

Variegated Balm (*A Subscriber, Bradford*).—It would not come true from seed. For seven stamps you can have from our office "Greenhouses for the Many," and at page 43 is a description of Arnott's stove, and other modes of heating, [illegible] lengthy for us to extract.

Works on the Cucumber (*S. A——, a Subscriber from the Commencement*).—Both the books you mention are out of print, but may be met with at the second-hand book-shops. The directions given in the *Cottage Gardener's Dictionary* are by a good authority.

Building a Vinery (*An Old Subscriber*),—You propose building a vinery 60 feet long and 15 feet wide in Yorkshire. If the natural advantages of your place be good, we see no reason why your undertaking may not become a good investment if you go the right way to work. First of all, secure good drainage; and though you mention you do not intend to heat the house at first, still let the mode of heating it be considered at the time of building, as it will most likely have to be done after, and may be more difficult then. And as coals are cheap in Yorkshire, a good flue may serve your purpose. Keep the house, or rather the border, above the level of the surrounding ground rather than under it, and if you only want it for growing Grapes glass in the front may be dispensed with; only if the front wall be more than 3 feet high there ought to be glass; if below that, sliding shutters not less than 2 feet square and 3 feet apart may be worked in for ventilation. Rafters and sash-bars fastened to a purline in the middle will do very well if the whole of the glass is to be fixed, which it may be if thought well of, having a board not less than a foot wide to act as a flap to give air at top. This, in addition to the doors at the ends and the front shutters, will do very well. We do not fully understand your ideas about the glazing; but assuming you to use twenty-one-ounce glass, squares about 8 inches wide and about 20 inches long work in very well, it is better not to have them any wider, and the Vines may be planted a yard apart. And as the house is to be used only for Vines, wires stretched the whole length of the house and about 1 foot from the glass and 1½ foot from each other answer as well as any way; and if the end fastening be good, any small wire will bear them from the rafter or glazing-bars, and you can train your Vines any way you please. If the materials for your Vine-border be good, you will have canes fit to carry a fair good crop in two years; and some soils in North Cheshire, Lancashire, and Derbyshire, seem to contain in themselves everything wanted to secure good Grape-growing. But you will have noticed what has been said by Mr. Appleby and others in this Journal on that head. At all events, let good drainage be thought of at the beginning, and other things will present themselves to you in a manner that will prompt you to understand their wants; and our columns are ready to reply to any further communication you may think fit to make.

Grapes not Colouring—Figs not Ripening (*A Three-years Subscriber*).—It is no easy matter to account for Grapes not colouring well at certain times, as there is sometimes an unaccountable capriciousness in certain Grapes to do so. Generally speaking, there is something wrong when they do not colour well, as, when they begin to change, the transition from green to black ought to be rapid—no hanging in the red state. Neither do all the berries in a bunch colour together, some being green while others are quite black. This is when all is right. It sometimes, however, happens that a too heavy crop occasions the berries to colour badly, or the growth of some other crop on the border occasions their doing so, or, what is quite as bad, their shanking. Perhaps this is the case with our subscriber's Vines. The description of the Vines and of the house they are grown in is very good; but it may be all neutralised if the border is used for flowers, and such things as Fuchsias are allowed to cheat the Vines. Figs like a great deal of water while in a growing condition, and they also require the full sun, which they cannot have at the back of a vinery: it is therefore only a few fruit at the top that are likely to do well. If the evil should arise from the roots of trees or other things getting into the border remove them; and if the Vines require it, lift them up and replant, after securely making the border afresh in the manner described in former Numbers of this Journal.

Cottagers' Horticultural Societies.—The undersigned would be much obliged to any reader of The Journal of Horticulture who would send him rules and directions for the formation of a society.—J. H., 3, Bouverie Street, Fleet Street.

Insect on Cabbages, &c. (*A. C.*).—It is the *Aphis brassicæ*, or cabbage louse. Tobacco water will destroy it if applied with a syringe. The Brussels Sprouts when cut may be cleared from them by washing in three or four waters, having salt dissolved in the water.

Various (*R. E. T.*).—Twelve pages of questions from one reader by one post like yours would soon defeat the object we have in view, and we should be obliged to answer the first question only. 1, Vegetable Marrows and Custards are preserved like common Gourds and Apples for winter use. 2, Reigate sand is only best for cuttings. Any sand is as good as any other for mechanically making a soil more porous or loose for pot plants. 3, We do not know yet the best way to pack Grapes. The common way is to wrap the bunches in silver paper, then in a box with bran or chaff or husks of hemp. 4. Fuchsias to be now set to rest till the spring. 5, Cuttings made now of Heliotrope, Verbenas, Geraniums to remain in the pots over the winter. 6, Rooted cuttings will keep better in a greenhouse than in a brick pit. 7, It is not too late to strike Variegated Mint in-doors, not out at this season. 8, It will not improve the circles for Rose trees to have variegated plants to edge them. 9, The best sorts of edging plants are named every year. Consult the indices of the last three Volumes. 10, Very rotten dung is very good indeed for Deodars, as Mr. Beaton proved in the Experimental Garden. He also proved that flies and bugs are "cured" by cleaning the parts with pure spring water as well as if they were cleaned with all the decoctions in the world. The expense is the time doing it. Every plant in cultivation can be kept free from all the insects by common spring water if we could afford the labour to do the work.

Seedling Geranium (*George Holmes*).—Your seedling Geranium is very good, but of no value—there are so many like it, and they are all descended of the blood of Rubens. You would not know your own seedling from a bed of the best Rubens now on the Rose Mount at the Crystal Palace, and we have many as good.

Gas Stove (*Novice*).—If the fumes arising from the burning gas are carried away by a tube through the roof of the conservatory no injury will be caused to the plants. If you will buy "Greenhouses for the Many," as recommended to another correspondent to-day, you will find in it, at page 38, directions for heating by a gas-heated small boiler, as well as by a gas-stove, with illustrations.

Seedling Tropæolums (*A Regular Subscriber*).—Of the Scarlets, No. 1 has the advantage over Perfection in being deeper and richer coloured, and is the best of the three described as compact-habited sorts (marked 1, 2, 3), which, being similar in character, are not all required. Of the other Scarlets, No. 9, apparently of intermediate habit, is far the best—indeed the best of the whole as regards the form of the flowers, which is very perfect. No 14, if not coarse-habited, is also fine, having large, well-formed, smooth, orange-scarlet flowers. Nos. 10 and 11 are inferior. 13 is near the large-flowered Brilliant of the darks. No. 8, with flowers smaller than Nigricans, but described as of good bedding habit, is apparently good, having firm smooth flowers. An unnumbered one (apparently No. 4, which otherwise is not sent), with larger flowers, also appears to be superior in smoothness to Nigricans, but was rather faded. No. 7 not so good as the foregoing. Of the yellows No. 6 is distinct and good as regards colour—a golden yellow with large feathered blotch on all the petals. No. 5 is near Gauntlet in character, but a shade or two paler; its value would depend on its habit, which looks promising enough. No. 12, pale straw-coloured, is too loosely formed. The best are therefore Nos. 1, 5, 6, 8, 9.

Grapes in a Greenhouse (*A Subscriber*).—Neither the Muscatel, nor the Canon Hall Muscat, nor the Alexandrian, will ever ripen well in your greenhouse, which is never heated. We should have a furnace and flue to ripen these Grapes, if the Vines twelve or fourteen years old are healthy. If you do not obtain artificial heat you must uproot these Vines, and plant in their place the Royal Muscadine and Buckland Sweetwater.

Names of Fruit (*Leighton*).—The Pear is Williams' Bon Chrêtien; the scarlet Apple Red Astrachan; and the Russet Golden Russet.

Ulcerated Grapes (*A. Y. W.*).—They are so much affected by what is technically called "the spot," that the berries are totally gangrened. We have little hesitation in saying that it is occasioned by the want of sufficient activity in the roots, so that they do not supply sap in quantity sufficient to keep pace with the demands of the growth within the house. If the roots were kept warmer, and supplied with a little tepid liquid manure during the berries' growth and ripening, such ulceration would not appear. The roots might be kept warmer by exposure of the border to sunshine, and covering at night and during cold days.

Work on Flower Garden Designs (*A Subscriber*).—"The Ladies' Assistant on the Formation of the Flower Garden," can be had from our office free by post for 11*s*. Its price is 10*s*. 6*d*.

Ferns in a Cool Vinery (*A Subscriber*).—The species of Cheilanthes mentioned—namely, viscosa and elegans, together with Platyloma calomelanos and Nothoclæna chrysophylla, will live in the cool vinery from which frost is only just excluded, provided the roots and the atmosphere are kept dryish. Pteris scaberula at no time requires heat; but it likes more moisture both in the soil and the atmosphere than the foregoing. We should doubt if Adiantum concinnum, Pteris aspericaulis, tricolor, and cretica albo-lineata, would succeed under such circumstances, especially P. tricolor, which comes from the hot Malay Islands. Still, however, many stove Ferns will live in a low temperature if kept quite at rest, and these may do so. It is worth trial.

Wintering Geraniums (*A Lady*).—The best plan, in your case, was told last week. But now the Geraniums and the Fuchsias to be pruned in to the old wood just before the frost, and nothing more to be done to them till March, except seeing the mould does not get quite dry in the pots they are now in. The system of keeping Geraniums in pots and boxes for many years without a change has been called Harry Moore's system in our pages for the last dozen years; but your plants and pots are yet too small for that plan.

Tomato (*M. P.*).—There are several varieties of Tomato, and that which among your plants differs from the more common, is probably the "Cherry-shaped." It is a well-known kind.

Tulips and Gladioli (*S. T.*).—We never give the names of seedsmen. Let the seedling Gladioli remain, but well covered with coal ashes in winter to exclude frost.

Names of Plants (*M. Sturge*).—It is Clitoria ternatea, introduced as long ago as 1739. It is one of the most beautiful of the climbers among our stove perennials. It is called ternatea from being first discovered in Ternate, one of the Molucca Islands. A drawing of it, with directions for its culture, are in vol. vii. of Paxton's "Magazine of Botany." (*R. F. S.*).—Hoya bella. (*H. G. N.*).—Nos. 1 and 3, indeterminable scraps without flowers; 2, seedling of Pteris aquilina. (*G. B.*).—Only nineteen plants sent for names at once! Have you never seen our notice that we cannot name more than six at one time? 1, Pteris tremula; 2, Cyrtomium falcatum; 3, Davallia canariensis; 4, Adiantum hispidum; 5, Diplazium decussatum; 6, Pteris hastata; 7, Adiantum formosum; 8, Adiantum assimile; 9, Pleopeltis Billardieri; 10, 11, Gymnogramma ochracea; 12, 13, Adiantum cuneatum; 15, Asplenium bulbiferum; 17, Asplenium flabellifolium; the rest are Selaginellas. (*Cape*).—The seedling plant sent appears to be some Casuarinia, which we do not suppose would endure our winters exposed. We do not know the Boer Bean. The name of Wattle is given in Australia to several species of Acacia: thus, A. mollissima is called the Black Wattle; and A. dealbata, the Silver Wattle. (*A. Cole*).—It gives much trouble to send us leaves without flowers. 1, a Hoya, probably carnosa. If so, it requires stove heat while growing, to be potted in good peat and loam, mixed with pounded brick or old lime rubbish, and well drained, to have the full sun, to be moderately watered, and in winter to be rested in the cooler temperature of a warm, dry greenhouse; 2, Nerium oleander; 3, some Rhododendron.

FLOWER SHOWS FOR 1861.

November 6th and 7th. **Royal Horticultural Society.** (Fruit and Chrysanthemums.) *Garden Superintendent*, G. Eyles.

November 12th and 13th. **Stoke Newington Chrysanthemum Society.** *Sec.*, W. T. Howe.

November 14th and 15th. **Crystal Palace.** (Chrysanthemum Show.) *Sec.*, W. Houghton.

POULTRY, BEE, and HOUSEHOLD CHRONICLE

JUDGING POULTRY.

It seems imperative that some other means of judging poultry, &c., should be adopted than the plan now in use. Nearly all parties seem displeased at some point or other; and my opinion is, that unless a change is adopted, very soon many respectable exhibitors will cease to send to shows.

I think a fair course to pursue would be to solicit opinions upon the subject of all connected with shows and exhibitors, and so obtain a universal voice in the matter.

For my own part, as an exhibitor, I find fault—I condemn entirely the plan of Secretaries sending the numbers of their pens to exhibitors, for more than one person is aware that a Judge is often invited and made welcome at certain estates of breeders, where the marks, general character of the stock, &c., could be carried in the eye and judged accordingly.

Again, the judgment of one person is not sufficient to satisfy strangers as to the capabilities of those judges. If a number were invited to judge separately, placing their opinion under cover on paper, the result must be more satisfactory. For example, take the Crystal Palace. In the advertisement for next Show, they should invite persons who are known breeders, and can show by having been exhibitors, poultry fanciers, &c., that they must understand to some extent, to come on such a day. The Secretary *first* numbering, quite indiscriminately, all the pens, each person shall pass through the Show *singly*, write on a list, containing his name and address, his judgment, placing them as usual—1, 2, 3 prize, Highly Commended, and Commended, in this form—

Opinion of
Address
State if Exhibitor at this Show or not. [Yes or No.] If so, what No.·
If not, state if a Breeder of poultry.

CLASS II.—SPANISH.

Stages of excellence for awards.

	Prize. 1	Prize. 2	Prize. 3	High. Com. 4	Com. 5
No. 16		16			
17				17	
18	18				
19			19		
20				20	
21					21
22				22	
23					23
24					

Arbitrators—Messrs. Baily & Hewitt.

All present, for a certain limited time, and each placing his judgment with the Secretary, who shall then proclaim "state of the poll, &c."

Another plan I would advise, not to give the chance in chicken shows of stating such barefaced and palpable untruths as to ages as were told at the Crystal Palace. Chicken shows are not altogether good at any time; but if they must exist, be very severe in rules laid down that they are the chickens of the year named, but avoid the age being required to the day. Almost as well have a register and state the moments, &c.

I trust you will excuse my lengthy epistle. Many friends of mine are of the same opinion as myself: therefore I write as it were jointly, and have no doubt if you put the question as I mention you will find plenty of replies, and not much variation.

I would not do away with the office of Judges, the present two (Messrs. Baily and Hewitt) should still give their opinion the same as the rest, but their office should be that of arbitrators if necessary.—T. B.

[We insert this communication in the hope of eliciting opinions from our readers. We fear, although such a system, under stringent regulations, might be likely to secure impartial judgments; yet it would involve so much delay, and impose so much extra trouble on the Secretary, that we believe, unless well paid, no one would undertake the office, already sufficiently laborious and sufficiently attended by disagreeables.

If a judge possessing a competent knowledge and of known integrity can be found, economy, rapidity, and undivided responsibility are best consulted by his dictatorship. But never should one judge be appointed to decide upon one class—he is liable to the justified suspicion of knowing too much about the birds exhibited.

But, in every instance, we should prefer two or three judges—not mere ciphers only serving to screen the real judge from responsibility, but men really having a good knowledge of fowls.

Let us avow, however, our decided opinion that generally the awards are correct; there are mistakes made occasionally, but [illegible] are very rare; sometimes [illegible] are unquestionably made from corrupt motives, but these occurrences we are quite certain are still more rare.

Before any one exhibits he ought to make one resolve—"If I lose the prize, I will not lose my temper." With many men this resolution would be more easily made than kept; and the clamour we have sometimes heard raised in an exhibition-room by disappointed exhibitors, has always been as unreasonable as that of the spectators who went to the theatre to see a man get into a wine-bottle and rioted because he did not do so! If they had rioted one another because *they* had shown an error of judgment, they might have been excused; but they never suspect error in that direction.

Neither does it ever seem to occur to exhibitors to inquire—"Who does an exhibition benefit?" Certainly not the Committee or the Secretary—they are certainly losers of time, and too often losers of money. Neither does it benefit the Judges, for they rarely ask for more than their expenses, and too often do not have them paid. The benefit then is chiefly to the exhibitor. Poultry shows afford him an opportunity of obtaining superior specimens, of selling his surplus stock, and of making public the merits of his birds.

Such are our impressions relative to those connected with poultry shows; and we record as our unbiased opinion, that they are usually well and honourably conducted, and are altogether beneficial to the community. The exceptions are very few, and, as in other transactions, these exceptions prove the rule.

Our columns are open to those who agree with, and to those who dissent from, us; but nothing must be sent to us anonymously, let nothing be said that a man would be afraid to say standing on the centre pen in Bingley Hall.

We will conclude with some extracts from a letter we have received upon the subject:—

"I once did accept a very urgent request to act as referee at a poultry show, some gentlemen amateurs officiating as the actual arbitrators, and I was given especially to understand my duties would begin only in case these gentlemen should differ in opinion so much as to go on no farther; 'but they hoped my position would prove a sinecure altogether.' I at first declined the proposal, but a second pressing but truly courteous note made me yield compliance—a circumstance I have always regretted.

"I duly arrived on the ground, and, after a delay of some time, the Judges proceeded to duty, leaving me with the Committee to take a glass of wine, or employ my time as best I could. Time passed on hour after hour, and yet they made no application; the visitors were coming in at mid-day. I had read the *Times* almost through, and I felt assured if they wanted me at all they would go through every class before any application was made. Time still progressed, but at length they did come, when I found, to my utter astonishment, they had barely completed a half of their duty. After an abundance of talk in support of their relative divided opinions—for though 'referee,' they would not submit to me as such, but evidently considered me as one only of themselves, and 'only a voice among many'—I at length pulled through two disputations carried on, purely as though I had not a voice to control, but simply to discuss in any way—in fact, I could scarcely speak, so disputant did they become among themselves. Of course, much of this took place before visitors, at least in earshot of them, and I was repeatedly called to, 'Go in yourself and finish it, and leave them to quarrel it out, for it will be time to close directly.' Of course, though similar requests were urged by various exhibitors, I did not go as desired; but, at last, the show was finished, myself acting with them for the last some twelve or fifteen classes, and suggesting most of these latter decisions.

"After I was at liberty I took a stroll along the previous classes in which I was not consulted at all, and the prize cards being up; I found in two different first-prize pens a humped-backed bird in each, and a rosy-combed pullet in a second-prize Game pen!

"I would not myself accept again an office so painful, and so completely unsatisfactory to my own notions of common rectitude for any amount of emolument that could be proferred me in return.

"Poultry judging is no sinecure I can assure you, and at best the duty is a thankless one, nor do I myself believe any mode of determination will prove satisfactory to all. Dissentients will always push their way, if clashing with their own success, to every plan however well preconsidered and advisedly carried out, and let them be altered as frequently as they may be to suit the views of the time being.

"Writers on the subject usually know little of the financial management of poultry exhibitions. You will, perhaps, be astonished to learn, that although (as you know) my stipulation is for expenses out of my own pocket, giving my services gratuitous, I only some fortnight back reckoned up more than forty meetings that have never refunded me a single farthing of these outlays. The replies I receive are either 'They are very sorry there are no funds;' 'The Society is broken up;' or by preserving a rigid silence to any application, and that, I am sure, from parties who in their own affairs would certainly not thus compromise their position in society.

"I have more than once been fettered to a drag-chain colleague, and was actually once asked by a volunteer arbitrator (who was a very spirited local money supporter of the Show, and had pressed forward to be allowed by the Committee to assume office) 'Now, as I don't know anything of these things myself, pray which are the Dorkings? for I only took office to benefit the Society, and knew I should be right enough with you or ——.' What a gratuitous help!

"But the next item is *time*. There are plenty of shows open at 10 to visitors, and close the same evening; one hour, or little better, being devoted to arbitrations, after previous penning being made complete of the birds the same morning, the Committee enjoining it must be opened as to time specified. None but uncontrolled, and diligent, well-practised eyes can do it at all in that period."]

NORTHAMPTONSHIRE POULTRY SHOW.

THURSDAY, SEPT. 26TH.

WE have often had occasion to speak of the supineness of those connected with agriculture when poultry is the subject; but here we must change our note, because the progress made justifies us in saying, it was the largest and best we have ever seen in the county. We think ourselves justified in deviating a little, to remark that the advance was not confined to poultry, but was apparent in every department, beginning with the locality that was chosen. It will be difficult to imagine a much better spot than the racecourse; and we are bound to praise the enterprise that encountered considerable expense, with only half a day's admission besides the subscriptions to depend upon to meet it.

This meeting is a holiday wherever it goes. From the concourse of people that attend it, the number of entries in the different classes, and the perfection of its arrangements, it is more like that of the Royal Agricultural than any we know, except the Bath and West of England. On Thursday the racecourse was covered with cattle, while the hoarding that surrounded the yard supplied the sheds and stalls in which the competing horses were shown. Outside the yard hundreds of acres were being ploughed by two horses, four horses, six horses, and by steam. The latter will, we think, swallow up the former. Then there were military bands, flower and fruit shows, and exhibition of roots. In the afternoon presentation of colours to the Northampton Rifles, and dinner in the pavilion at three.

We are very partial to these large gatherings, and during the many years we have attended this county meeting we have never seen anything that would interfere with the belief they are productive of much good. Outside the yard the road assumes the appearance of a fair, where every sort of sport is carried on, but everything appears to be done in perfect good humour, and every one seems to be on his good behaviour. One thing we most gladly note, and that is, we visit no place in our peregrinations where so little swearing or bad language is used. Swearing would appear to be uncommon, and may it long remain so.

It was always wished to encourage at an agricultural meeting the breeds most useful in a farmyard, and it will not, therefore, cause surprise that *Dorkings* are the most numerous; and if we add thereto, that one of our oldest and best Dorking breeders, the Rev. F. Thursby, has aided his neighbours with counsel and birds, that will give the cue to unusual excellence. There were thirty-five pens in the Dorking classes. The old birds were many of them in bad plumage from moulting, but their quality left nothing to desire. Mr. John Shaw, of Hensbury Hill, took first and second prizes, and Mr. Wood third. Seven out of eleven pens were in the prize sheet. There were nineteen entries of Dorking chickens. We do not hesitate to declare this a first-rate class, and to say that many pens shown here will (barring accidents) figure in larger prize lists than Northampton. They sold freely at the prices put upon them. Mr. Shaw, again, took first and second prize. Mr. Tatham, of Kingsthorpe, took third. The Rev. Mr. Thursby, Mrs. Harris, and Messrs. Dawkings and Wood, all deserved more than a "high commendation;" but there was nothing more to give. There was also a marked improvement in the *Spanish*, both adults and chickens, especially the latter. These brought eighteen pens. Mr. C. Wright, and Messrs. Rogers, Bull, Smith, and Tatham took the prizes. The *Game* fowls shown by Mr. H. Shield, of Northampton, were so far superior to anything else that was shown in the same classes, that they achieved an easy victory. There is not the improvement we look for in the Game. *Cochin-Chinas* were very good, especially the cock in Mr. Brown's first-prize pen. *Hamburghs* were weak as usual. The "Distinct Breeds" brought Silkies, Bantams, Malays, and Brahma Pootras. There were also shown as "Extra Stock" three pens of remarkably good Game Bantams. They were not for sale, or they would have readily found purchasers.

There were excellent pens of Aylesbury *Ducks*, but the best lost its position by having a ruptured Duck in it. Here, as elsewhere, the Buenos Ayreans were good and numerous. It would seem as though they intended to become nearly, or quite, the most numerous of the Duck classes. Messrs. Smith and Shaw took prizes with them and the Rouens.

The *Turkeys* were very good.

An extra prize of £1 offered for the best pen of fowls in the Exhibition, was awarded to the first-prize Dorking chickens, the property of Mr. John Shaw.

So far as could be known when we left the yard, the meeting was a decided success. We mention this not because success is a novelty to this Exhibition, but because on this occasion more expense was incurred than usual.

Mr. Baily was the Judge.

BRIDGNORTH POULTRY SHOW.

FOR a number of years past it has been generally admitted that Bridgnorth Poultry Show has been one of the most popular throughout the midland counties, no small proportion of the public excitement arising, without doubt, from the extraordinary interest always manifested by several of our principal breeders of exhibition fowls, to secure to themselves the much-coveted silver cup, value seven guineas, so liberally offered by the Committee for the best collection shown by any single proprietor. As the number of pens entered for this special prize in former years was left quite unrestricted on those occasions, each competitor not only exhibited all the gems in his possession, but also got together as great an amount of tolerable specimens as attainable to still farther increase his chances of success. This year, however, the Committee limited the number of pens competing, and as a natural sequence, the collection as a whole fell short of the aggregate of preceding years—in fact, the only party who now ran hard for the premium secured it—Mr. Martin, of Claines, Worcester, who on several former occasions had ranked among the unsuccessful ones, but as invariably stated he would never relax his exertions until he did win it. The fact that the present winner had in previous years shown even by far a better collection than at this time, and was then defeated, shows beyond controversy that on the peculiar conditions imposed by the regulations of past years hung the great popularity of the Meeting; and, possibly, the discontinuance of any restrictions in future would at once restore all the enthusiasm, the loss of which on this occasion seemed so universally regretted by the visitors assembled. We heard with sorrow that personal or family illness had precluded altogether entries for this cup, from some who in bygone years struggled to the utmost for its possession; and repeatedly we heard the inquiry, "Where are Chune, Peters, Rodbard, &c.? each of whom had rejoiced in the ascendancy at some previous occasion. We indulge the hope that in 1862 the spirited rivalry of former meetings will be perfectly restored. One fresh arrangement of this year, however, seemed a most advisable one—viz., to again hold the poultry exhibition in a tent upon the field, in connection with the other agricultural produce generally; as during the past few seasons we heard of visitors who actually left Bridgnorth without seeing the poultry at all, and even going so far as to express their conviction that no poultry whatever was exhibited. So singular as such an assertion may appear, it is not the less true, but under present arrangements it is impossible such a contingency can occur.

The *Cochins* headed the list, and here Mr. Bates, of Edgbaston, Birmingham, attained an easy victory with his well-known pen of Buffs, although other colours competed. As we have so frequently spoken of late in terms of well-merited praise of these birds, it would be superfluous to repeat our opinions. We cannot, however, pass them by without dropping a friendly hint to their owner. He is quite over-exhibiting them. The cockerel, admittedly, is a bird of that happy temper that would make himself quite as comfortable in an exhibition-pen as when enjoying all the advantages of his home "walk." Not so the pullets; they manifested unmistakeable symptoms of unhappiness and discomfort, by raising the feathers on the head and shaking it continually sideways—the best of all possible proofs that condition is waning. It is really a pity to exhibit so perfect a pen so continuously; for we were informed that for three consecutive weeks they have been in competition—a trial quite too much for any fowls, and still more especially chickens. The second-prize Partridge-coloured Cochins were also very good. In White Cochins, Mr. Bates was again the successful one, although Mr. Chase was but triflingly in the rear.

The Grey *Dorkings*, that hitherto at Bridgnorth were always good, were this year quite a deficient class.

As to *Game* fowls, in which variety condition alone is so all-important, we hardly anticipated a very perfect collection, it being just now the very midst of moulting time. This temporary imperfection was peculiarly visible in the "Single Game Cock" class, the whole of which were in deepest pin-feather. Still we willingly admit, in the Game classes were to be seen many fowls that some six weeks to come would add most materially to the credit and interest also of any poultry show.

The *Hamburgh* classes, though not numerically well filled, were decidedly good. Nor must we fail to favourably mention some of the best *Poland* pullets (Black with White Crests), we have seen for several years past.

The two prize pens of *Spanish* were "alone in their glory," not a single opponent. They were very good birds, but quite out of condition.

In the "any variety class," Mrs. Blay, of Worcester, showed a pen of very singular Polands, the whole of the bodies being of an exquisite metallic blackness, combined (even in the pullets), with feathers formed very similarly to those of the Cormorant. The cock's crest was a bright bronze colour, but with the exception of a hackle-feather or two, the pullets were not in any way a match to their male companion. Their singularity and marvellously capital feather, however, caused them to be very attractive.

Some first-class White-booted *Bantams* were shown in the Bantam class, open to all breeds.

To say Mrs. Seamons, of Aylesbury, took first and second prize for Aylesbury *Ducks*, is singing one of the oldest songs of the season. They stood out like giants among their opponents; and we heard a very wealthy landed proprietor say jocosely, "Mrs. Seamons, to give fair play, ought to be compelled to enter her Ducks in the Geese class." A friend of the speaker retorted, "Do you think you could persuade the lady? I fancy not." In the united class for all other varieties of Ducks save Aylesburys, Mrs. Wolferstan (Miss Steele Perkins), of Statford Hall, near Tamworth, exhibited a pen of Buenos Ayrean Ducks, quite able to support the prestige of that lady's strain of this beautiful variety. They were not only very small, but in exquisite plumage, and being entered at the unusually low figure of two guineas, they were speedily "claimed," and we were informed the lucky buyer would not re-sell them although he could almost have doubled his outlay. The remainder of the class was composed entirely of Rouens, they being also of very excellent quality.

As "Extra Stock," George Pritchard, Esq., M.P. for Bridgnorth, showed a pen of beautiful White Call Ducks, another of domesticated Wild Ducks, and a third as Black Rouens: these latter were, as most amateurs will suppose, Buenos Ayrean Ducks, all three of the pens being of great merit were highly mmended.

he rifle band of the Bridgnorth volunteers played exceed- ly well at intervals throughout the day, and excited much pplause; the uniform of this band is very peculiar. The old dage tha "practice makes master" was amply illustrated i [illegible] management [illegible] he [illegible] Exhibition; the poultry tent, indeed, was closely filled with visitors during the entire proceeding.

The whole of the poultry was promptly returned at the close of the day without accident or mishap of any kind—a feature we strongly recommend to every Committee of Management in such exhibitions, as tending, perhaps, even more than any other to the repute and success of future meetings of their respective societies.

As on former occasions, the arbitrator was Edward Hewitt, Esq., of Eden Cottage, Sparkbrook, near Birmingham.

FOR CHICKENS OF 1861.

COCHIN-CHINA (any colour except White or Black).—First, H. Bates, Edgbaston, Birmingham (Buff). Second, J. B. Walthew, Aughton, Ormskirk (Partridge). Highly Commended, J. B. Walthew (Partridge). Commended, B. Chase, Moseley Road, Birmingham (Buff).

COCHIN-CHINA (White or Black).—First, H. Bates, Edgbaston, Birmingham (White). Second, R. Chase, Moseley Road, Birmingham (White). Highly Commended, H. Bates.

DORKINGS.—First, J. Whittington, Wootten Wawen, Henley-in-Arden. Second, Mrs. Wolferstan, Statford Hall, Tamworth.

GAME (Black-breasted and other Reds).—First, A. Dyas, Madeley (Red). Second, J. Martin, Worcester. Commended, A. Dyas (Red).

GAME (White and Piles).—First, A. Dyas, Madeley (Piles). Second, J. Barnforth, Holmfirth, Huddersfield (White).

GAME (Duckwings and other Greys and Blues).—First, A. Dyas, Madeley (Duckwings). Second, Miss Beldon, Park Cottage, Bradford (Duckwings). Highly Commended, R. Chase, Moseley Road, Birmingham (Duckwings).

GAME (any other variety).—First, A. Dyas, Madeley (Black). Second, J. Martin, Worcester (Black).

GAME COCK.—First, — Cherrington, Allscott (Brown-breasted Red). Second, A. Dyas, Madeley. Commended, — Cherrington, Allscott (Brown-breasted Red).

HAMBURGHS (Golden-pencilled).—First, J. Martin, Worcester. Second, R. Robson, Tulip, Monkswearmouth, Sunderland. Highly Commended, H. Bates, Edgbaston, Birmingham.

HAMBURGHS (Golden-spangled).—First, J. Martin, Worcester. Second, J. Barnforth, Holmfirth, Huddersfield.

HAMBURGHS (Silver-pencilled).—First and Second, J. Martin, Worcester. Highly Commended, Miss Beldon, Park Cottage, Bradford.

HAMBURGHS (Silver-spangled).—First, J. Martin, Worcester. Second, Countess of Dartmouth, Patshull Park. Commended, Miss Beldon, Park Cottage, Bradford, Yorkshire.

POLANDS (Black with White Crests).—First, J. Barnforth, Holmfirth, Huddersfield. Second, Miss Beldon, Park Cottage, Bradford.

POLANDS (Golden-spangled).—First, withheld. Second, R. Chase, Moseley Road, Birmingham.

POLANDS (Silver-spangled).—First, Mrs. Blay, the Poplars, Gregory's Bank, Worcester. Second, Miss Beldon, Park Cottage, Bradford.

SPANISH.—First and Second, J. Martin, Worcester.

ANY OTHER VARIETY.—First and Second, Mrs. Blay, the Poplars, Gregory's Bank, Worcester (Black Polands and Andalusian).

BANTAMS.—First, H. Bates, Edgbaston, Birmingham. Second, Miss Beldon, Park Cottage, Bradford, Yorkshire. Highly Commended, R. Robson, Tulip, Monkswearmouth, Sunderland (Game).

DUCKS (White Aylesbury).—First and Second, Mrs. Seamons, Hartwell. Commended, — Rainforth, Monkhopton.

DUCKS (any other variety).—First, Mrs. Wolferstan, Statford Hall, near Tamworth (East Indian).—Second, J. Holme, Knowsley, near Prescot. Highly Commended, Mrs. Knock, Bridgnorth (Rouen); J. Holme, Knowsley, near Prescot.

EXTRA STOCK.—Highly Commended, G. Pritchard, Esq., M.P., for Bridgnorth (Buenos Ayrean Ducks, Domesticated Wild Ducks, and White Call Ducks).

JUDGING GAME FOWLS—THEIR HACKLE.

BEING an exhibitor of poultry, I have thought it well to write you for the purpose of expressing my hearty concurrence in your remarks, relative "to the exclusion of poultry from our shows that are privately marked," contained in your Journal of the 17th.

It is a matter of deep regret that so much dissatisfaction has been caused to exhibitors by some of our Judges, who, no doubt, know the private marks of most of our largest breeders of Game fowls, and who allow these marks to have much influence over them in giving their decision. I know that every exhibitor is a little prejudiced in favour of his own birds at our shows; still I have no hesitation in saying that the best bird does not always win, consequently dissatisfaction arises. The Judges should bear in mind that there are plenty of people who visit the various shows who know quite as much of poultry as they do, and I am afraid that our poultry shows will soon become extinct unless there is a little more uniformity amongst our Judges in the judging of Game fowls. Some will tell you that a pure-bred Game cock should have short hackle-feathers; others will tell you that this is all moonshine, and the longer the feathers are the better the breed. Now, it so happens that a case of this description has recently come under my own observation, where a bird was deprived of the prize by one Judge, on account of the length of his hackle, but on being sent to another show (the Sheffield) he had the first prize awarded him. Now you could probably tell me which is right and which is wrong. In conclusion, I will just remark that I think it would be well if our Judges would agree on the principal points about Game fowls, and lay down some rules as a guide to exhibitors.—Fidelis.

[It may be that some of the Judges who undertake to award prizes to Game classes know the private marks of some of the exhibitors; but all are not marked alike, and the inspection of a book or list would show some marked to the right, some to the left, some in one place or way, some in another. Other fowls are not so marked, and we do not at all think marks are ever looked for—we are sure they are not by our oldest Judges. You are wrong in saying that Judges "allow these marks to have much influence over them in giving their decisions." Such a remark should not be written unless it can be proved. Even Judges cannot agree about the points of birds, by your own admission; how, then, can they be called upon to draw up rules? It is generally supposed scanty, firm, and close plumage is preferable to long and necessarily loose feathers in a Game cock. We only give our own opinion.

Under the awards of some of our old Judges, poultry showing has become what it is, and their awards, as a whole, have been almost unquestioned. They have certainly been approved. We have the pleasure to know most of these gentlemen. They have told us frequently that they are quite ready at any time to retire in favour of younger or more able persons than themselves; but that if they officiate, it must be on their own terms.]

DUBBING GAME COCKS.

As one interested in the solution of the question, let me ask Why is the dubbing of Game cockerels to continue imperative? Why should good dubbing be essential with Game, while to tamper with the head disqualifies with Spanish? Surely it is admitting more mechanical dexterity as an aid to excellence in competition. In my own case, I have a yard full of Game chickens, but I never dubbed one, and know no one in my neighbourhood who can. Personally—I confess to the depraved taste—I prefer the look of a well-dubbed bird. Probably, years ago, I should have admired the spigot tail, cropped ear, and hogged mane of the "neat cob." I like with "Gallus Pugnax," but feel and judge (partially) with "Humanitas." With deference to the former I must think that scalping brings more than a very little pain to all bipeds.

Give us liberty. Our birds are not candidates for the mat and the silver spur. If readiness for the pit is to be the criterion of excellence, then let them be shown, not only dubbed and in condition, but with the squared tail and trimmed wing.

Give breeders the liberty allowed this last summer at the Crystal Palace for birds of all ages. Do not let the Judges' fiat be distanced when a good bird comes home in front, carrying comb and wattles extra.—Duckwing.

REARING CHICKENS WITHOUT A HEN.

I have very often noticed letters from many of your correspondents begging to be informed how to rear young chickens without the hen's assistance. I have dabbled in this to a great extent myself, both as to young birds and chickens; and though it is not quite the proper time of year for chickens to be most about, it is, perhaps, the more likely that one or two of a stray choice breed should demand extra care.

There are three great points to consider—How to make the young chicks eat, How to keep them warm enough, and How to keep them through the increasing hours of darkness.

For the first—How to make them eat. I always observed in feeding young birds in nests that if one held the bread and milk too close to the nest they never thought of taking it—holding it overhead as the birds do they snapped it up directly. Now, in watching a hen with her chicks, we find she always scratches the ground at their feet, and when she feeds the brood she picks up grains and holds them under their bills. So I go now on that line—chickens that will not peck are always brought to me, and I throw the crumbs about with a bit of stick, and keep touching the chickens underneath the bill, and stroking down their throats outside, sometimes till they naturally look down after the stick, or finger, and see the food and eat it. They stuff sometimes till their crops stick out in the most ridiculous way, just like large walnuts.

Crumbs of bread do almost best, I think, to feed them with, and grains of rice; but my chicks will not eat rice unless it is boiled quite properly in the Indian fashion, as if it was for a curry. They also have potatoes and barleymeal, or little scraps of fresh meat. The how to keep them warm enough is partly involved in the next step. We never let them get cold. The moment the meal is over they go into a punnet filled daily with nice soft moss, and this basket is entirely wrapped up in a large piece of baize or flannel, and once or twice, to my great amusement, we had to give them a bottle of hot water to keep their little feet warm. The basket then was put to rest up against the bottle. We always place something rather solid on the top of the basket to keep down the chickens, which like to feel covered up. For a long time a big duckling sat there every night; but now he is grown up and has long ago changed his quarters, as have the chickens theirs; but anything heavy does to press them down. We invariably put the chicks to bed the moment they have done eating, except for two or three hours in the day, when they run about in a large cage standing in the sun.

The keeping them through the night is very simply done, as it is chiefly want of food that makes them feel the cold. We give them a good supper just about ten o'clock; they can then wait tolerably till seven the next morning, though the earlier and later they can be fed the better.

Treating them thus they get most absurdly tame, will not acknowledge a hen by any means when we have sometimes tried, but come scutting back to their own proper friends. This spring there was some plague with a hen having eggs given her some later than the others, and the ten little chicks, of which I was taking care, used to come rushing up my sleeves and close to my face, and then screw themselves in and make the peculiar purr that pleased chickens do make.

A duckling and chicken were again the only produce of a far-brought set of eggs; the duck took to the chickens and I took to the duck; and, when ducky had a soup-plate full of water, he would insist on taking chick with him, and, like a meek little girl with a naughty big brother, little Miss chicky went.

Some of those home-reared chickens are now very fine, they are some weeks in advance of others hatched before them, and brought up by a hen.—E. M.

OFFENSIVE FLAVOUR IN THE FLESH OF FOWLS.

I see in last week's Journal "An Old Subscriber" complaining of offensive smell with fowls. Mine were in the state as he mentions, and I was some time before I could find out the cause, the eggs being so bad we could not eat them. At last I found by steaming some of each of their food, the odour arose from the grain given them, which I had been having from Mark Lane, which is gatherings of all kinds of grain mixed. Since purchasing the grain separately—viz., to one bushel of barley mix one peck of good sweet oats, and half a peck of Indian corn, I have never found the slightest trace of it. The roosting-houses smelt in the same manner as the eggs tasted, although they are cleaned out two and three times each week.—T. B.

A QUEENLESS HIVE.

On August 12th, 1861, I wrote to you detailing a result of introducing a Ligurian queen to common bees up to that date. On August 26th, saw first young Ligurian bees, just five weeks after introduction of queen, being a week longer than seems to be generally the case.

All went on right till September 5th, when, as subsequent events have proved, the queen was lost. On going to the bees on this date I saw the queen at the mouth of the hive. She immediately attempted to fly, but apparently owing to her great weight she was unable to do so, for she fell to the ground. She again made another attempt and flew about three-quarters of a yard and got amongst some lupins. Here I saw her very distinctly, looked at her very attentively, and attempted to get her to crawl upon a leaf I put to her; but instead of going on the leaf she again attempted to fly, and seemed to get to some raspberry bushes, when I lost sight of her, and could not find any traces of her though I examined the place very attentively.

I regret now that I did not seize the queen whilst on the lupin with my fingers, and place her again in the hive, but at the time I was not sure she was the Ligurian queen, as I could not see any orange bands round her body. I thought it possible it might be the queen from the old stock of black bees which had got to the site she (the black queen), originally occupied, as the old stock is only 200 yards or 300 yards off, within an easy distance.

The queen was much the finest one I ever saw, the wings did not seem to cover more (if so much), than half her body: hence her inability to fly. This queen must have gone much darker since I received her, as the orange on her body was then quite visible. I also watched the hive for a considerable time to see if the queen returned, or if any commotion would take place. Neither the one nor the other, as far as I was able to determine, did take place; and as I had always been led to expect that a commotion among the bees would take place as soon as the queen was missed, I was led to think, that possibly the queen might have returned, or else that the queen belonged to the black hive, and so that all was right. To-day, after an absence from home for about a week, I went to the bees and was atonished to find no fewer than six dead queens on the ground in front of the hive, proving, as I think, that the queen was lost on September 5th, and that the bees have been rearing artificial ones. The above confirms what the "DEVONSHIRE BEE-KEEPER" says in this Journal, that it is not always the case that excitement takes place in the hive when the queen is lost.

The advice I want is, what to do in this case, as I do not wish to lose the stock. From the article in this Journal, and from previous remarks made by the "DEVONSHIRE BEE-KEEPER," he seems convinced that the queen can lay eggs though unimpregnated, but that all the produce will be drones. Now, has it been shown, or does the "DEVONSHIRE BEE-KEEPER" know, whether after drones are produced that these drones will have intercourse with the queen, their mother, and so render her capable of laying female eggs? If so, there is a reason for her laying drone eggs, or rather we may consider it a wise provision of Nature to prevent the hive dying out. Should I let the bees alone and watch the result? Should I unite them to another stock, or should I introduce another Ligurian queen to them, provided the "DEVONSHIRE BEE-KEEPER" could furnish me with one?

It would be interesting to leave the bees alone and see if the queen would ultimately lay female eggs, only the season is so far advanced and the hive is not very strong—both against the experiment: however, I wait your advice.—A.

[The queen, doubtless, missed her footing on the combs (which I fancy were not worked nearly down to the floor-board), and not finding her way up very readily quitted the hive and was lost. Had you seized her at once and returned her to the hive through an opening at the top, all would have been right. If no drones are left either in your own or any neighbouring apiary, the young queen must remain unimpregnated, and in this case will breed drones only. She will certainly not be impregnated by her own offspring. If you leave things as they are you may (in the absence of drones), have an opportunity of testing the doctrine of parthenogenesis; but the stock will, of course, be valueless if the queen remain unimpregnated.—A DEVONSHIRE BEE-KEEPER.]

REMOVING BEES A GREAT DISTANCE—MAKING A SWARM SETTLE.

I AM about to change my residence, and have four hives of bees that are pretty strong. What would be the best way to move them? The distance is about eighty miles.

To make a swarm settle I take a looking-glass, and throw a few flashes of lightning, as we said when children, among them. The bees settle at once.—IRELAND.

[The hives should be tied up in cloths of an open texture (cheese-cloth is the best), inverted, and kept as steady as possible. With these precautions they may be removed with perfect safety.]

GARDEN WARBLERS AND NIGHTINGALES IN CAGES.

I HAVE just procured a couple of Garden Warblers, wishing to keep them on account of their beautiful song. On referring to the instructions of Bechstein I find that on account of the quantity of food of a farinaceous nature (German paste) which they consume they do not live long in cages. Do you think that if I give them a great deal of raw meat and fruit, instead of the usual diet, I shall succeed in keeping them in health? Also, keep the birds entirely for their song, whether they sing equally well if I put half a dozen birds together. For instance: the two above named, one Nightingale, one Blackcap, one Redstart, and one Whitethroat? The size of my largest cage is 3 feet high, 2 feet deep, and 6 feet long. At present my birds are in the ordinary cages, rather less than a foot square.

It may be of service to some of your readers who keep soft-meat birds to inform them that I have kept Nightingales in full song, also Robins, throughout the winter as follows:—During August and September I collect all the caterpillars and maggots from rose trees and cabbages, putting them in a large, covered jar, with a little fresh earth and leaves of either lettuce or cabbage. They continue growing, and eventually change to the chrysalis state, which they retain all the winter. My birds enjoy them exceedingly in either form at the rate of two per day each bird.—AVIARY.

[My father says Garden Warblers are not likely to sing if kept together, and that each should have a separate cage. German paste he considers too heating, and a bad food. He thinks the nuts of a bullock's liver boiled hard and grated, and mixed with yolk of egg, bread crumbs, and crushed hempseed, with occasionally a little raw meat, the best artificial food.—B. P. B.]

THE AILANTHUS SILKWORM.

I AM just now much interested in the growing of silk. I have been in communication with a lady in the south of England, who has been engaged for years in cultivating the finest Mulberry silk. I have just been reading a short article on the subject of silk in your Journal of August 27th, in which Lady Dorothy Nevill assures you of her success. I am anxious to know (since she uses Ailanthus instead of Mulberry, and the coarser worm instead of the white) to what extent she has carried the experiment? What number of worms? What proportion of labour required? Proportion of silk to number of cocoons, and the worth of the silk? These, I conceive, are only lawful questions to ask, and ready as I should be to enter upon the labours of a silk plantation, I should not like to do so without I had some data to go upon; and where is Dangstein, Lady Nevill's residence? Is it in Germany? I feel quite sure that there is sufficient reason to expect silk may be successfully cultivated in England, and if I could obtain through your valuable paper the requisite information, I should be delighted. Two more questions—What species of Ailanthus is it? and if the copses of trees are used, do not the birds devour them?—FRED. W. TOWLE.

[It is quite a different worm from the Mulberry one; it feeds entirely on the ailanthus tree, a most hardy shrub (a kind of ash), which may be grown as our beech copse woods are here—that is, if cut down, they shoot again from the stems. Lady Dorothy Nevill's worms were, after having been hatched a week, placed on the trees, where they were left till they made their cocoons. The second crop of worms were hatched too late, and Lady Nevill was away from home during three fine days, and the wasps having no fruit to get at devoured them all. Not having been pestered with wasps before, Lady Nevill did not guard against this, which another year she will do. Mr. Towle had better wait till Lady Nevill's pamphlet is published, as then there will be every detail, where the eggs are to be obtained, &c., and there is nothing can be done till the spring. Dangstein is six miles from Petersfield station on the Portsmouth direct line.]

OUR LETTER BOX.

JUDGES AT SHOWS (*A Rabbit Fancier*).—The Judge who acknowledged that "he had not been particular in his measurement" of the ears of Rabbits shown in the class for length of ears, certainly was guilty of a dereliction of duty, but we cannot insert anonymous communications. The Show in question is under a cloud; and if many more complaints are published about it, its next year's prospects will not be very encouraging.

KEEPING PIGEONS' EGGS (*M. R.*).—If the eggs of Pigeons are removed before being sat upon and carefully kept, they will remain good for hatching for about a fortnight.—B. P. B.

LIGURIAN QUEENS (*W. Brooks*).—"I regret to say that I am very much in arrear with regard to the supply of Ligurian queens. Had I been aware that it would have turned out so troublesome and unsatisfactory an affair, I should never have attempted to supply queens, but should have confined my attention to the propagation of stocks, which I find will travel safely to any distance, and are free from the uncertainty and frequent disappointment which attend the introduction of queens. If a queen arrives safely at her journey's end, I consider my responsibility ends also.—A DEVONSHIRE BEE-KEEPER"

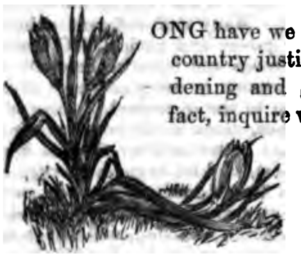
AILANTHUS SILKWORM (*A Lady*).—You had better wait for a few weeks. Lady Dorothy Nevill is about to publish a pamphlet, which will give you all the information you need.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	OCTOBER 8—14, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
8	Tu	Chrysocoma villosa.	30.138—29.981	62—39	W.	·01	14 af 6	21 af 5	36 7	4	12 28	281
9	W	Scabiosa gramuntia.	30.009—29.914	54—30	N.W.	·01	16 6	19 5	42 8	5	12 44	282
10	Th	Euphorbia emarginata.	30.145—29.488	54—40	S.W.	·36	17 6	17 5	55 9	☽	13 0	283
11	F	Helianthus divaricans.	30.604—29.418	49—25	S.W.	·16	19 6	15 5	12 11	7	13 15	284
12	S	Scolymus hispanicus.	29.875—29.790	53—36	W.	·10	21 6	12 5	morn.	8	13 30	285
13	Sun	20 Sunday after Trinity.	29.557—29.389	54—39	S.W.	·06	23 6	10 5	27 0	9	13 44	286
14	M	Eupatorium aromaticum.	29.776—29.518	54—29	N.W.	·01	24 6	8 5	40 1	10	13 58	287

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 69° and 43° respectively. The greatest heat, 74°, occurred on the 8th in 1859; and the lowest cold, 26°, on the 11th in 1858. During the period 114 days were fine, and on 124 rain fell.

A FEW DAYS IN IRELAND.—No. 1.



ONG have we been convinced that in this country justice is not done to the gardening and gardeners of Ireland—in fact, inquire wherever we might, or from whoever we hoped to gain information on those topics, we were invariably disappointed. Little could be gathered—and what was gathered was crude. So we resolved to send thither "Our Special Commissioner," and the following is the first of a series of details of the results of his visit. We rejoice to find that his observations fully confirm our anticipations, and to learn the fact that now the third of the Island Graces has her drapery arranged as tastefully as that of her two sisters. This is as it should be; for, changing our simile, every man among us must feel that our national cable's greatest strength is to be attained, and its working rendered most easy, only by having its three strands perfectly equal.

Mr. Fish has used his critic eye and critic pen acutely and faithfully—but there is no wormwood in his ink. —Eds. J. of H.]

Several circumstances rendered it desirable that some idea should be formed and expressed of the state of horticulture in its various branches in the Emerald Isle. Among these circumstances was an opinion that it would afford something like a test by which we might judge of the social progress and mental refinement of the great masses of the people. In this our first attempt to realise that opinion we made Dublin a sort of centre; and as our time was very limited, what we may have to say of the places visited must be looked upon as merely hurried glances rather than as anything worthy of the name of descriptions. Any deductions which we may afterwards draw from such a hurried visit must be looked upon as having a general rather than any particular application. If we attempt criticism at all, even in matters of taste, it will be done in the most kindly spirit, feeling that if we can give no pleasure we have little right and less inclination to inflict pain, and more especially since from all we came in contact with we received the greatest kindness, courtesy, and willingness to oblige.

Before noticing any places, it may be as well, in the way of introduction, to dispel at once two ideas, which, though ignored by the well-informed, are yet found lurking in the minds of many in this larger island—namely, that the Irish are even now only slowing emerging from a state of comparative barbarism; and, again, that so far behind are they in general industry, in gardening, and in agriculture, that any poor wight who would or could use neither his brains nor his hands at home, might yet manage to pick up a livelihood among the still lazier and more indolent natives of Ireland.

Than this last idea no greater error can exist; and we shall our canny friends of the spade and the plough some service if we tell them, once for all, that they had better keep Ireland out of their thoughts, unless determined to take active, intelligent heads and active hands and feet with them there.

Laziness might have been too much of a national trait when the few pennies a-day, and these procured with difficulty, constituted the sole motives for activity. There is no resisting the fact that a man must eat and live comfortably before he can work energetically. Sad and disastrous times have been endured by our Irish brethren, the bare recollection of which saddens and darkens the spirit. But the angel of want and of woe, as he passed through the land, scattered from his wings the seeds of future progression and prosperity. Government aid, state help, in the shape of loans for effecting permanent improvements; above all, Christian benevolence, rising superior to all petty sectarianism, and the self-sacrificing patriotism of the old resident proprietors of the soil, who in the most unfortunate times never lost faith in the future destinies of their country—true noblemen these, whose deeds and whose efforts have made for themselves shrines in the hearts of a people;—these, combined with assistance to willing emigrants, and the land coming into the possession of owners who had capital to work it, instead of absentee possessors, who took all and gave, or could give, nothing in return, along with other causes too numerous to mention, have given an impetus to exertion and labour, and showed that Irishmen, so active and industrious in other lands, could be equally energetic at home when sufficient motives could be presented for that industry. And now in the activity displayed in the docks and quays of Dublin; in the railroad pace with which the cars rattle along the streets; in the excellent management of the railways; in the bustle in the warehouses and marts of business; in the ability with which machinery is managed on improved farm homesteads; in the zest with which the long-handled spade or shovel, and the short-handled steel forks, are used in garden and field; in the neat whitewashed cottages taking the place of the chimneyless and windowless mud hovel, we not only see everywhere indubitable signs of active go-a-headism, but strong reasons for believing that anything like laziness and sloth will ere long be unable to find any elbow or standing room there.

Notwithstanding, however, these signs of progress, the wages of labour in some districts are still too low to permit the full development of human muscular labour power. On this account some of the best friends of Ireland would be sorry if the number of returning emigrants to Ireland should be greatly increased. Perhaps just now it would be as well if these emigrants continued in the land of their adoption. But the tendency of all improvement is so to increase labour, that we have no doubt but that ere long much more labour power will be wanted than can now be obtained, and then wages will rise to the benefit alike of the employer and the employed. There seems, from all we have been told, a principle at work in Ireland which will tend to make wages more uniform than they are likely to be for some time in England. Not only is it the most energetic among the Irish, as it is among the Scotch and English, that emigrate to distant lands; but whilst in England the stayers at home can hardly be induced to leave the sound of their parish church bells, there is little of the same feeling among the resident Irish, provided they can still locate themselves within the precincts of the sacred isle.

There is a little soreness mingled with a good deal of fun and sarcastic irony among our Irish friends, as they quiz you respecting the opinions still held of them by the good people of Great Britain. "Well, Mr. F., do you really find us as great barbarians as you were led to believe?" "What! really ventured among us Paddyites, without being ball and cudgel

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proof?" "Don't you find us woefully behind your clever John Bullites?" "Ain't we thoroughly sunk in wretchedness and misery?" "Haven't you found a poor tattered beggar at every turn?" &c. Well, our hearts are glad that our good neighbours can poke their rollicking satire and dry humour at us. We will take it all and look for more, if it only makes them happier, and gives them more resolution not to be satisfied until they far outstrip us in improvement.

We forget whether it was Leigh Hunt or Charles Lamb that, after passing one of the wretched mendicants sitting in the streets of Dublin, his heart smote him, and returning to the man he said, upbraidingly, "If you are really in want, why don't you beg?" "Ain't it begging I am?" said the poor wretch, as every shake and movement of his rags showed the shrivelled and famine-struck skin. Now, no such sight did we witness in Ireland. Only three times were we asked for alms. Had we gone to an equal extent through the streets and lanes of London, Edinburgh, or Glasgow, we should have expected to be applied to much oftener, and to see more filth and wretchedness too. Not but that among the females some dresses were seen that might form a pattern for some new style of scolloping and fringing; not but that among the males coats might be found of divers colours, and openings to let in the wholesome air, where no piece of suitable colour could be found to fill it; but these were merely such exceptions as seemed destined ere long to become curiosities.

Mud huts and chimneyless huts do, no doubt, still abound in Ireland. We were privileged to see only one, some eighty miles from Dublin, and that close to a miserable drink shop, that seemed never to have known the smell of lime inside or out. These mud huts with just such a patch of ground as a family might possibly exist upon, but more likely starve upon, were a fruitful cause of misery. Owing to the strange and complicated modes of tenure of land, the most benevolent landlords would have been next to powerless in breaking up a system which was sapping the life blood of the nation. The famine and the emigration to which it led did much to break up the system—did more than any reasoning could have accomplished. Many who starved upon their plots are now, not small farmers, but well to-do labourers, living in pretty cottages, with an allotment of an eighth or even more of an acre—sufficient to employ them in their overtime, with convenience for keeping a pig, and also in many cases a cow, if they choose to hire enough of grass land for the purpose. Many of these men from their saving habits will ultimately become *bona fide* small farmers. The more such a system has been adopted, the more we see the marks of improvement. It was quite pleasant to see the clusters of cottages so clean whitewashed inside and outside, and going before the English, and Scotch too, in a matter of science, by washing the roofs when consisting of tiles or slate, and thus making their houses warmer in winter and cooler in summer.

Though our view was limited, we do not speak altogether without book. In one day we passed through Bray twice, where a fair was being held. There were a number of cows and oxen, a greater number of sheep, and perhaps still more of pigs, many of which seemed on friendly terms with their owners, as they held them in something like submission by a straw rope round the legs. The pigs of all sizes, even when each pig seemed to belong to a separate owner, appeared to be in good condition; and about their owners there was no mistake as to the appearance of well-to-doism. On returning we met with many cars, the riders in which were just cheerful and happy, and ready to vent their good humour on all they met. The streets, though full, had every trace of good order as well as good fellowship. We saw nothing at all out of the way except a pretty girl dancing in the street, with a circle of very quiet well-behaved people around her; but whether she was learning them some new step or was merely giving vent to the exuberance of her spirits we could not learn. In expressing our approbation of the general respectability, we were told to wait until it was late and then we would see. Well, we did not wait, and therefore can say nothing to the correctness of the prophet of evil.

A few days later at Kilkenny the streets were crowded with cars, and the cars themselves crowded with riders to see some races a few miles distant. Only a very few were seen in the streets whose garments had anything of the tattered or torn; and many an old lady, and young damsel too, looked extra respectable, as they surveyed the scene dressed in their fine blue cloth cloaks with a hood, which they pulled over their nice [illegible] instead of a bonnet [illegible] figures and faces there which many a painter would have been delighted to transfer to his canvass. But if the bulk should approach in character to the little we have seen, then, to all those who delight in rags and wretchedness, and who consider that the highest branch of art consists in depicting the extremes of human agony and woe, we would say, "If you think of going to Ireland at all you must go quickly, for all such specimens will soon be numbered with the curiosities of the past."

One simple fact, like the feather thrown into the air, will often give a good idea of the state of a country. The first morning we were in Dublin we got up early and had a ramble before breakfast, map in hand, looking at some of the finest churches and chapels, the Custom-house, the docks and splendid quays, furnishing an example to proud London; the College, Bank, St. Stephens and other Greens, Merrion Square, and the house in which the great O'Connel lived there; and as we had listened to his burly eloquence in London we bent our steps to Conciliation Hall, the scene of some of his greatest and most successful efforts—and lo and behold! it was crammed to the wide doorway with sacks of flour!! Many and different opinions may yet be held as respects the power and genius of O'Connel. Few will now deny that to wrongs and injustice he owed the power which he wielded. Oppression in every case ever brings with it a double curse—a curse to the oppressed, a curse ultimately but surely to the oppressor. Some would even now stir up the expiring embers of ill-feeling: better smother them in flour-bags, sing a requiem over the past, and let bygones be bygones. Britain has shown that she will treat Ireland as a loving sister, anxious that she should be happy, prosperous, free, independent as herself; and Ireland, ever generous and kind, will not decline the mutual embrace. One thing we are certain of—and that is, that when a people have plenty of flour-bags, plenty of pork, beef, and mutton, they are neither likely to lag behind in the march of improvement nor be greatly influenced by the oratory of the political agitator. Good dinners go a long way to make quiet, contented, comfortable citizens. Good dinners will yet play a great game in Ireland.

Lest we forget the subject, we must say in conclusion, that we were disappointed in not meeting with a sign which we associate here with social and moral refinement. We saw nothing worthy of the name of window gardening. Even most of the squares in Dublin, so far as flowers and any pleasure from the grass to the surrounding inhabitants are concerned, seemed to be kept entirely for the benefit of some neighbouring dairyman. The utter lack of window plants was a great loss to us in our wandering, as we have got into a habit of forming an idea of what sort of people live inside of a house from noticing the plants outside, and we seldom make a mistake in this matter. However, we had no means of thus musing in Dublin. Some told us that it was against the civil regulations to have plants outside of windows, as they might be dangerous; but that could be easily prevented, and there were plenty of balconies from whence no plant could fall. Others said that many had little gardens out of town, and, therefore, did not trouble themselves with them in their windows in Dublin. Be these reasons as they may, the want of such plants was depressing. We do not say that it exactly savours of want of refinement, for until lately there was but little of window plants seen either in Edinburgh or Glasgow. We do not know how such northern friends would like it if told that notwithstanding their hardheadedness, shrewdness, and intellect, they were something behind their southern brethren in refinement. Our Dublin friends will delight us if they improve also in this respect. We went through miles of streets and squares without seeing a single plant in a window. Amid such a wilderness of brick and stone, we landed at last on a charming oasis in the shape of a beautiful blue china basket or box, just the size of the window-sill, and filled to overflowing with fine, healthy, blooming Scarlet Geraniums. This was in Clare Street, close to Merrion Square. We have no right to make public the name on the door of the house, but if man or woman had come out we must have thanked them for the treat. Some more impetuous, like the girl at Bray, might have tripped the Highland Fling on the pavement. At all events, we hope such a beautiful box will not long remain "alone in its glory." R. FISH.

A VARIEGATED OAK.—A common Oak tree growing near Mawley, the seat of Sir Edward Blount, containing upwards of [illegible] feet of timber was struck on the 26th of June, 1838, by lightning during [illegible] thunderstorm which passed over that part of the country. The tree did not appear to have suffered at the time, but shortly afterwards the foliage, which was previously green, as in other trees of the same species, became beautifully variegated, and has continued ever since to produce variegated leaves, and otherwise to maintain quite a healthy appearance.—(*Scottish Farmer.*)

KEEPING BEDDING GERANIUMS OVER THE WINTER.

THIS is the most pressing question in October to thousands, if not to the million. The sweeping out of the last severe winter was like that of a new broom, and nothing in the way of plants was left to thousands but to begin a fresh start in the spring. I was among the sufferers, and I must turn over a new leaf this winter.

Let us suppose that this will be the mildest winter we have had for the last twenty years, and suppose that some of us would believe the weather prophets if they told us the prediction, and let things go in the old tracts, and then suppose the ensuing winter, after Christmas, would be even more severe than the last, how should we get out of the fix? It is foolish to trust to the weather at any time in matters horticultural, and in the winter keeping of plants more than in any other point the year round.

I shall begin at home, and say how I mean to keep two or three thousand Geraniums after all my under-glass room is filled up with things which would not rest or keep dry for ten days together. The oldest plan of keeping Scarlet Geraniums in winter in a dry state is still one of the best ways of doing them, and I shall put up four or five hundred plants that way. My cellar is as dry as a bone, as the saying is, but it is rather too warm; I mean to give it more ventilation to make it cooler in the first start. 48° was the regular heat of the cellar in the coldest of last winter, and that was exactly the degree while there was no frost at all. Now I want to keep the heat for my keeping Geraniums down below 40°, or say 40° itself; for with all our knowledge there is not a man or woman in the three kingdoms who is yet certain of the best degree of heat or cold of the place where Geraniums keep best in long winters. The best degree for keeping Potatoes is 32°, just the freezing-point, and if Potatoes could be kept at that temperature the whole of the winter and to planting-time in the spring, they would never sprout in-doors or wherever they were. But I must assume the best degree for keeping Scarlet Geraniums, and shall say 35° to be the very best till experience proves a better point on the scale. I am quite confident that the right degree of heat is the grand secret for keeping Geraniums in a dry or half-dry state in winter; also that the heat should be as even as possible the whole time, and not rise and fall with the changes out of doors: therefore a cellar, which is perfectly dry, is a far better place to put them in than a room above stairs in any part of a house. Unless the place is perfectly dry it is next to useless trying to keep Geraniums there.

Then, the oldest plan is this—A man was ordered all at once at the end of October to spend the winter in Italy. It was a mild autumn, and his beds were not then touched by the frost; but he must be off that afternoon, or else lose the chance of getting off for a month—the worst in the year for his chest. He ordered his best Geraniums to be taken up "as they were" on the instant, that he might see them in-doors before he left. They were soon up, and they had them bunched as they bunch Coleworts for the markets—that is, three, four, or six, or so many, according to their size, were tied together; the ties just over the roots or round the necks of the plants, and each bunch was hung up on a nail against the passage going into one cellar from another. Every leaf was left on, and some of the mould to the roots on account of the hurry. Some one was told to look after them, and pluck off the leaves when they dried up, but he forgot all about them till very late in March, and every one of the plants was then alive, smothered in a dry dusty covering of old leaves, and sprouting below this covering in all directions. I had the story from the clergyman of this district—for we are not parish people here in Surbiton—and it must be true; but then that cellar was as dry as mine is. I could keep ten thousand Geraniums safe as nuts in my cellars, for I have more than one, if they would stay or stop with me; but that is my difficulty. They will not stop with me in the cellar; they are on the go as soon as I put them there; they will not stop and I cannot keep them. That shows the place ought to be as cool as I say—35°, or at all events under 40°. I can conceive a case in which leaving the whole of the leaves on the plants till they withered would be of great advantage—say a bed of strong succulent plants. The leaves in a dark dry cellar would gradually suck all the extra sap out of the succulent stems, and leave them in a medium state between soft and hardwooded—just the right condition supposing the place was not over 35° of heat the whole winter; but if it was much warmer and currents of air allowed through it, the dryness from the sucking of the leaves and the parchiness of the air in motion, would dry up the whole of the plants to cinder substance.

Then, three conditions are absolutely necessary to render it safe to put up Geraniums with all their leaves. The first, a uniform temperature of 35°, supposing that to be the right point; the second, perfect exemption from all damp; and thirdly, a still atmosphere. Secure these three points, and your Geraniums may be pulled up out of the beds and be hung up in the place the same day.

The best way I ever found to keep Geraniums, however, was to cut off every leaf of every one of them, and to leave them their entire length, and I have begun on the first day of October to prepare my minimums or smallest kinds that way, such as Harkaway, Baron Hugel, Crimson Minimum, Golden Chain, and a dozen more kinds of the same stamps and habits that have not yet been named. Whether these be in pots or in the open ground I do them all exactly alike, and I shall not lose one out of five hundred of them; and all Geraniums that are bigger than mine would, of course, keep much more easily. Let me take one kind, the most difficult of them all, the Golden Chain, and say I had 500 of them back from the Experimental, which I had not by the way, and that 300 of them were planted out all the summer, and 200 being very small bits of plants, were kept in pots till the first of October. I shook them out of all the pots and up with those in the open ground, and did not leave a single leaf on any of them, nor a bract. The little blades which fold over the buds of Geraniums before they come out into leaves are called bracts; but no wound or cut was made in the shoot, so that there should be no wounds to fester with damp or cold. These I planted in very light loose soil in shallow boxes well drained, and the whole will be kept half dry and as cool and dark as I can to the end of January. By that time a few top leaves will be made, and I must bring them to the light.

The next degree of plants will be of the strength of Tom Thumb, or thereabouts. They also will be kept in separate boxes after being stripped of their leaves. I shall have them in the dark, but not quite dry at the roots. They will need to be watered once in six weeks or so, and next day after the watering the surface of the soil will be loosened, and a thin covering of soil, as dry as dust, will be sprinkled over the whole surface to keep down the damp from the last watering.

All my Variegated Geraniums will be thus wintered, except one lot of seedlings, for which I must find light, and room, and warmth as best I may. Punch, and all of the strength of Punch, after the leaves are clean cleared off them, will be planted in by the heels on the floor of the cellar at one end, and as there must be a large bed of mould 4 inches or 5 inches deep, they will need no watering hardly; their own substance will keep them fresh enough till they begin to sprout in the spring, when the real battle begins. Now what I would recommend when there are only a dozen of plants and all in pots, or some in pots and some in boxes or baskets, or in a bed, would be this—never to attempt to keep a Geranium dry in the pot it was growing in the season before unless the plant is over three years old, and the pot is a No. 16. They would keep as safe in the pots as out of them, and more safe in some places; but in the spring you cannot moisten the old balls without giving them ten times more water than they ought to have. All the young fibres will then be dead in the balls, just like the annual roots in Mr. Rivers' orchard-house trees, and the young fibres will not take readily to old balls, or to balls too wet or too dry, and no mortal can have the balls in exactly the right state.

This brings us down to the roots. I shorten all the roots of all my Geraniums, those of the Golden Chain as much in proportion as those of Punch; and all the very small fibres I cut right out in October—a quicker way than allowing them to die by inches. When an Apple, or a Peach, a Rose, or an Oak, or a sapling, or a Golden Chain Geranium, or all Geraniums, have their youngest roots, cut off as early as October, the very first thing the oldest and remaining shoots will do will be to break out into small white points of roots all over their surface if they are put in warm moist soil; and, what is very, very singular, this new rooting will come faster if all the leaves of the plant have been cut off at the time the roots were trimmed. But you can prove that yourself just now with any two plants in the garden, two young Laurels will do, two Geraniums, two Gooseberries, or two of any kind; up with the pair and pare their roots; off with all the leaves of No. 1, but No. 2 must have them on, but No. 1 will have made as many young roots in one month as No. 2 will make in double that time, so that the presence of leaves does not always, and under all conditions, hurry on the making of roots.

It has only been since I had to do things of this kind at my own expense that I began to understand the value of one process over another which might be very like it, and Cobbett's definition of economy is my only rule. According to him good management means economy, and no saving of time or money ever was or ever will be real economy in the absence of good management. Well, to winter a lot of bedding Geraniums, or these, or any other plant seems easy enough, and so it is; but it is the want of economy of good management through the winter which tells so sadly against people in the spring. They never look at them for months, and some forget them altogether, like the man who left the leaves on all the winter. I look over my plants through custom, and if I should be ten days without seeing them I should think they were all dead. It is true I do very little to them many a time I see them; but it is equally true that they never want but very little doing to them when it is done so often, and with such care as practice suggests at first sight. If I see a spot, or a speck, or a bit of mouldiness, or a very dry corner, or a damp-like place in the bed, I rectify it on the instant. There are fifty little things which want doing, and which one could never remember two days together; but every one of them is sure to meet the eye in a long winter with a large lot of plants in a dry store.

To sum up in one paragraph, all Geraniums for dry housing to have all their leaves cut clean off, and all their small roots in October, and, if the tops are to be touched, to have all the green soft parts cut away, to shake them out of all the old balls, and to pot, or box, or bed the roots in shallow, light, sandy soil, and not to let them get quite dry. D. BEATON.

THE ROSES OF 1860.

ALL who have frequented the exhibitions this year where Roses have been shown have seen (and many of them borne witness to it) that never was there a season in which their favourite flower came so untrue to character. This has taken place not merely with those of recent introduction, but also with old and long-established claimants to popular favour; many it was hardly possible to recognise, and the thought was not seldom entertained the grower has lost his tally, and does not know what to put on them, and so puts the nearest he can. This, however, was not the case; the fault lay entirely with the unpropitious season.

It may, therefore, seem (and in fact is) somewhat difficult to decide safely on the character of new Roses; and I hold it to be a matter almost of impossibility to decide on them the first year of their culture here, they are so hacked and hewn about, their constitution is so tried for the purpose of increase, they are so heated and drawn, that a flower must have very superior qualities that suggests to growers, "this is a topper." I shall, therefore, only now speak of those which came out in the autumn of 1859, and are popularly known as the Roses of 1860.

If we have to complain of raisers here that they carry their plan to excess of pushing new flowers forward whether they ave merit or not, we may at any rate say that our friends on he other side of the channel are not less to blame in this respect. bout forty Roses were announced as coming out in the year 859-60. Many of them will never more be heard of; but I ink, with all deductions, I may confidently say that no season [illegible] *ever* produced such a number of really good flowers as that [illegible]. The season of 1861, so far as one may judge (producing rty Roses), is by no means equal to it, and certainly no season evious was so prolific in goo[illegible] lowers. Those whose merits [illegible] so small as not likely [illegible] them a permanent place in [illegible] osarium were numero[illegible] [illegible] ere is one point in which [illegible] good Roses [illegible] remarkable [illegible] habit. This is a point that ought to be well attended to. We have flowers of all hues, and shades, and tints, such at least as are possible in a Rose; but we want now good robust habit—such, for instance, as Eugène Appert and Madame C. Crapelet. Again, I think our lively neighbours should be reminded that we do not now want any "ragged Jacks," or large coarse flowers; they may be "useful" for a show, but I do hope that soon the better taste of the public will compel judges to regard such flowers as Souvenir de la Reine de l'Angleterre and Anna de Deisbach as materially damaging the chance of a stand. Let us aim at size by all means, but do not let us sacrifice refinement to it. No one can, I think, deny the superiority of a large handsome Rose to one of smaller calibre; but if the former has great coarse petals, and the latter well imbricated ones, or nearly cupped, the smaller one will be the favourite. The exquisite shape of Prince Léon, or Coup d'Hébé, or Gloire de Santenay is what should be aimed at; and if I have an opportunity (as I hope to) of chatting to our friends the French raisers, I shall not fail to press this matter very strongly.

Those flowers whose rejection is tolerably certain are Duchesse de Magenta, Gourdanelt, Isoline, Madame Eugenie Verdier, Madame Pauline Villot, Mademoiselle Eugenie Verdier, Mademoiselle Marie Dauvesse, Montebello, Triomphe de Bagatelle, Vainqueur de Solfarino, and Victoire de Magenta among the Hybrid Perpetuals; Cesonie, Madame Hoche, Mosses; and Guidetta and Guillaume Tell, Bourbons. Those whose position is somewhat doubtful are Alexandrine Belfroy, Admiral Nelson, Buffon, Coquette de Lyon, Leonie Moise, Princesse Imperiale, Clothilde, and Triomphe de Lyon, Hybrid Perpetuals; and America, Noisette. Those which I have every expectation of seeing general favourites are Belle de Bourg-la-Reine, Empereur de Maroc, Eugène Appert, Gloire de Santenay, Louis Quatorze, Louis Guillico, Madame Boll, Madame Charles Crapelet, Mademoiselle Louise Carique, Mademoiselle Bonnaire, Senateur Vaisse, and Victor Verdier, Hybrid Perpetuals; Baron Gonella, Victor Emmanuel, and George Peabody, Bourbons; Duc de Magenta, Madame Blachet, and President, Teas. Most of these have been exhibited this year, and some of them very finely so.

With regard to the Hybrid Perpetuals, the *detur pulchriori* must, I think, belong to *Gloire de Santenay*, said to be a seedling from Général Jacqueminot. It is of a rich purplish-red, and approaches nearer to Paul Ricaut than any other Rose out. It is, therefore, of fine shape, has a thick shelly petal, and a vigorous habit, and is in fact a Rose, not without a thorn, but I do believe without a fault. Both Mr. Rivers and Mr. Radclyffe have expressed the same opinion to me relative to its merits. Next comes, I think, *Senateur Vaisse.* This is also a truly magnificent Rose, apparently of the same strain, and is little behind the former flower. *Madame Charles Crapelet* is a deep glossy cerise flower with great breadth of petal, but has a little too few of them. *Mademoiselle Louise Carique* is thought more highly of by my friend Mr. Radclyffe than by myself. It blooms very freely in clusters, is a very vigorous grower, but I rather fear is inclined to show a green eye, and is not equal in shape to those which I have already mentioned. *Louis Quatorze* is a Rose of brilliant velvety crimson colour, very full, but has the fault of carrying a very long footstalk, the stalk itself being rather too slender. *Eugène Appert* I have frequently spoken of. Its outline is defective, but there is no Rose more striking for its brilliant colour and fine foliage, and will for many years be a favourite. *Empereur de Maroc* is a very striking Rose, admirably figured by Andrews in Paul's "Rose Annual" for 1860-61, of better habit than I believed it to be, and quite necessary for any exhibitor. *Louis Guillico* is brilliant in colour, but I fear its petals are too few in number ever to make it a very desirable Rose; still for the present we must retain it for its brilliancy. These are the high-coloured Roses of the group, and high-coloured flowers are most generally appreciated. *Belle de Bourg-la-Reine* has flowers of a deep satin-like rose, large and tolerably full, the petals being thick and the bloom well-shaped. *Madame Boll* is a flower of the same class, of fine habit and large size. This will be a very useful flower, if it does not show the green of the eye, for exhibitors, having size and quality as well. *Victor Verdier* is an enlarged Jules Margottin, but not so full or well-formed as that very deservedly favourite Rose. *Mademoiselle Bonnaire* is the nearest approach to white we have as yet had in the Hybrid Perpetual class: and what is of great importance is a Rose of good habit (delicacy of constitution having generally marked its predecessors), for we cannot class Madame Rivers nd Caroline de Bansal amongst whites. Approaching to them in colour is *l'Elégante*, a beautiful clear flesh-coloured Rose, well-rounded petals, and of admirable growth. My friend Mr. Radclyffe thinks very highly of this flower. *Victor Emmanuel* and *George Peabody* are two fine Bourbon Roses; the latter of American origin, very free-flowering, of good size, and bright; the former very brilliant, but inclined, I fear, to the Paul Joseph style of growth. *Baron Gonella* is a fine, vigorous-growing Bourbon, somewhat resembling Louis Odier; the flowers are whitish-rose, and the back of the petals deeper in colour. *Madame Blachet* seems to be a hardy, vigorous-growing Tea, of delicate rose colour. Lastly, *President* is a very superior flower, somewhat in the way of Adam; but more of the peculiar salmon tint of the Tea Roses is found in it than in that old favourite flower.

I have just heard from my friend Mr. Radclyffe, of Rushton, that he has written an article for the "Florist" on new Roses. Whether he and I shall agree I know not; we have had communications together about them, and I do not think that we have much difference of opinion, though as he is an exhibitor and I am not, it will probably happen that he will have the appearance of a flower in his stand in his mind's eye—I, its mere intrinsic beauty.

Nothing can be more favourable than the present fine autumnal weather for maturing the wood, and I think that Rose lovers have a rich prospect before them in the year 1862.—D., *Deal*.

WINTER FLOWERS IN ROOMS.—No. 2.

The Tulips placed last week in damp sand will not yet have shown much sign of starting. The Hyacinths (my own at least), ten days in the cellar, are getting on very well. The roots of some of them already are nearly an inch in length.

The next thing, then, is to look up the stock, and have those most advanced brought at once to the light. Most people will also wish to put in a new set to succeed the first, and it has occurred to me to adopt for all my bulbs the same plan as that advised for Tulips; it economises space, and will make a much completer dish at last. The bulbs, moreover, get a little mouldy very often in the cellar, and by this plan they have the advantage of having clean, well-aired sand.

My method is to draw each bulb gently out of its nursery-dish; and, having placed a little dry sand at the bottom of that which I wish to arrange for flowering, I hold the bulb up gently while pouring the dry sand in round it.

This plan has been often tried by myself in removing Hyacinths and Scillas, though not hitherto in entirely planting dishes. The removal does not cause the slightest injury to the roots, but the nursery-dish had better be made rather wet before the bulbs are touched.

This plan has the advantage of securing an even start; and if a bulb does fail, as it is generally shown by its not growing at all, we in this way avoid having one to replace in a set that are already twisting their roots much about. The Tulips take generally some time to start. If earliness is a great object we may try a few on a chimney-piece over a fire at night, replacing them in the dark cellar by day till the roots are well started.

The few that will be ready this week to arrange for flowering may be done as follows; for Hyacinths and Narcissi for grouping later:—Taking a number of small pots (or a range of tumblers), they may be filled with a few small pieces of charcoal for about an inch deep; then some sand; and then, the bulb being held steadily in its place, dry sand may be gently poured in all round, shaking the pot a little now and then. If the roots are long before the change is made, the bulb should be wound round, carefully avoiding injuring any of the roots; and this is done more easily by dipping them in water and then drawing them up through a half-closed hand—they go together almost like a wet bird's feathers. Few, however, will have such long-rooted bulbs for several weeks to come.

I proceed to the arrangements that have succeeded well in my own case for Tulips and Crocuses.

Each Crocus bulb, or rather corm, generally throws up several blossoms—as many as eight or nine in little groups, each of the white sprouts we see making one of the groups. These blossoms succeed each other quickly; so that if fading flowers are always cut off at once, and the plants are shaded from sunshine while they are in blossom, which is most essential, they will often continue gay during many days or weeks.

The Tulips, also, are very-long-lasting flowers, closing up at night and opening again by day. I should be quite afraid to say how long the flowers of some of my own Van Thols have lasted; but their being in a plant-case gave them very great advantages both as to growth and duration.

These very delightful little Tulips may be grown either in sand or soil. They answer admirably three bulbs in a large 60-pot—that is nearly close together, though they should be as far apart as the sides of the pot will allow; the pot well drained with charcoal, placed so as to prevent the hole being filled; some soil mixed with a little sand; and then placing the Tulip on the soil put in lightly, the remaining part should be pressed firmly down on the bulb, leaving out only the point. Pressing the soil at the top down firmly has been most effectual with me in preventing all sorts of bulbs from rising out of it; the resistance, of course, being less below than above if this is well attended to. This is a great advantage in transplanting Hyacinths and anything of the kind. The roots are shaken lightly in and only covered firmly; and every one knows the very great discomfort of watering a too-full flower-pot, as well as the ugly look which this gives the flower. The small red Van Thols are certainly most attractive, because they are so extremely sweet; and when they are planted three in a pot, or even two in a very small one, as I had some last winter, they are very useful for working up into any shape or pattern.

These Tulips answer most charmingly arranged with white Crocuses, or with the white Chinese Primrose.

A flower-stand fitted with one of the large glass Hyacinth-dishes alluded to last week could be thus made into a pretty pattern:—Three rows; the centre, for instance, a white Hyacinth or Narcissus surrounded with Scilla sibirica, or a blue Hyacinth surrounded with the large double Snowdrops (named expressly for in-door use); the small pots of red Van Thols alternating with pale blue Crocuses edged round with white, or with white Crocuses edged with blue Scilla.

These edgings may be easily managed, either by using rather larger pots (tumblers take up less room than flower-pots), and placing these round the edge; or by planting the Tulips, &c., and having all the interstices filled amongst the green moss with the pretty white or blue flowers. The Lycopodium itself grows in damp sand, and the Snowdrops and Scillas of course do perfectly.

If a Hyacinth-dish or milk-pan large enough were bought, a dish edged and fringed with Snowdrops would be very pretty filled entirely with the red Van Thol and a clear white Crocus, though I think it is prettiest with the blue Scilla added. In that case the centre would exactly have to match the Scilla or the Van Thol in colour; and the whole arrangement being in bands or alternate groups, the ground would require to be filled up with white. The colour of the common small blue Periwinkle would be just the right thing, or of the blue Hepatica, alternating with Chinese Primroses, the Primroses require to be rather low, and their pots should stand also lower than the others.

The Tulips require never to become dry. The more light they have the better; but the great requirements of all are avoiding heat and dryness, and broken leaves, which is one of the great dangers I find in window gardening; but then, when people have birds which often are flying loose, their difficulties, of course, are a good deal increased—for birds are certainly passionately fond of Tulips.

With Crocuses the difficulty, if it is to be called one, is not to let them draw up. Kept in a window far from a fire it is not likely that this will really happen; and of all the useful plans for economising light, the best I know is a series of hanging-baskets—mere frames of strong wire in which to suspend these dishes while growing.

In planting Tulips it is dreadfully tempting to pull the red "cap" open to see the little shoot the sooner. If people do not do that it is the better for their Tulips.

The Van Thols and Scillas, if tolerably well managed, will be out in December early, and so will the Narcissi.

The other kinds of Van Thol might be also used according to their colour, only they are not so early.—E. A. M.

THE RED SPIDER.

There is nothing like taking up a position; and so I say in direct opposition to "E. T.," page 499, that sulphur, if properly applied, is the best and most simple of all remedies against red spider.

Painting my chimney and flues did no good in my house; but a pan of water covered with a thick coat of sulphur, standing in a hot place directly under the Vines, has been for years a perfect preventive. The sulphur, floating in water, gives off its fumes gently and for a long time. Sulphur used with lime in painting flues, or the more dangerous practice of placing sulphur in pans so as to nearly melt it, is soon exhausted; it then, although its smell is perceptible, is innocuous to red spider life. If "E. T." had strewn sulphur on the surface of the soil under his Melon leaves no spider would have attacked them. Painting the frame, and placing a large pan of sulphur in it, would fill all the upper part of the frame with fumes obnoxious to the spider, while he would be living riotously on the under surface of the leaves.

I have always been accustomed to write only from my own experience, and seldom or never to theorise; and so let me tell the result of a very recent experiment on red spider.

In one of my ground vineries I have two Peach trees trained "en cordon," and pegged down to the slates. When the month of June came, in the summer just passed, I looked daily for the advent of our scarlet-coated enemy, for no plant or tree is more liable to his attacks than the Peach. About the middle of June he came, and by the end of the month so persevering was he that not a leaf was untouched. By the first week in July (for I must mention that I wished to thoroughly test the curative powers of sulphur, and so allowed him to have his way), the leaves became brown and seemed on the point of falling. Now was my time. I directed my man to take off the glass ridges, and then to lift up each tree while I strewed flowers of sulphur all over the slates on which the trees were to rest. The trees were replaced, the glass ridges placed over them, and I looked to the result of my experiment. In about a week the young leaves lost their spider-tainted appearance; and by the end of July the old leaves that I had thought dead became green and healthy, and the trees ever since have made the finest and most healthy growth possible. In the beginning of this month (September), I partially renewed the sulphur dressing as the weather was very hot and dry, but I could not see any remains of spider life. After this, "let them all say what they will," I shall believe flowers of sulphur properly applied a sure preventive and an equally sure cure for red spider. The proper mode of procedure in Melon-frames would be to place large pieces of slate on the surface of the earth, slightly sinking them so as to be level with it, cover them with a thick coat of flowers of sulphur, renewing it occasionally, and train the shoots over them. This, I have no doubt, would be as effectual with Melons as with my Peach trees.—T. R.

THIS pest is, perhaps, the most troublesome of the gardeners' enemies. The chief cause of its appearance, or prevalence, seems to me to be dryness, for it seldom attacks plants under glass where a considerable amount of moisture is present. For instance, it seldom or never fixes upon Melons while the heat from the bed is moist, and until we give a diminished supply of water or withhold it altogether, to obtain rich, well-flavoured fruit, red spider makes little progress. But so soon as the moisture becomes lessened, the spider finds a fit and proper medium for its labours, which soon (unless checked), annihilates the leaves to which it clings with remarkable tenacity, spoiling the present crop, and the future is a matter for hazardous conjecture.

The red spider cannot live in a house or frame having a greater amount of moisture than 90° (Saturation = 100), and it seldom makes its appearance where a mean humidity of 85° is kept. Neither will it thrive in a temperature (mean), below 45°, although its eggs will endure a considerable amount of frost.

We have had a severe attack this year of it on the Elm trees in this locality, which may be the chief cause of the trees being now (September 26th) almost entirely denuded of their foliage; but the drought of August, no doubt, greatly assisted. However, if the red spiders' eggs stood the last winter, which I suppose they did, it is evident their eggs will bear a very great amount of cold, no less than 35° of frost (— 3.)

We may also observe that the red spider rarely infests a plant attacked by mildew. The last some writers seem to attribute more to dryness than moisture; but I never heard of it, nor have I seen mildew in a dry, well-ventilated vinery, but in such a house red spider may be seen by myriads.

[illegible] attacks [illegible] those with smooth [illegible]

[illegible]

Gardenias, Franciseeas, Chorozemas, Clianthus, &c.; amongst fruit-bearers, Peaches, Vines, Pears, Plums, Figs, and Melons; but we seldom have any trouble with it on Geraniums, Begonias, Gloxinias, or Achimenes, &c., which have hairs on the leaves; or on succulent plants either, as Cacti, &c.

In order to combat successfully against it two things are necessary—first, the operations for its destruction should be accompanied with considerable moisture; second, a healthy state of the plant should be promoted above the leaves and below the roots, which will do more than all the nostrums in the universe.

The following nostrum may be as old as the hills for anything that I know to the contrary; it is made as follows:—Take 7 lbs. sulphur vivum, 1 lump of lime unslacked, the size of both hands; boil in 3 gallons of rain water for a quarter of an hour, then add 2 lbs. of soft soap, and 1 lb. of tobacco; add 9 gallons of rain-water, and boil again for half an hour. The liquid should be gently stirred all the time. Allow the mixture to remain until cold, it may then be put into stone bottles well corked. It may be used when fresh made, or it will keep for years. After being kept three months it will be clear, having the appearance of "stout," for which it might easily be passed off so far as looks are concerned.

APPLICATION.—First, in its pure state to the wood of Vines, or the wood of any plants liable to be attacked by red spider, thrips, aphis (green, brown, and black); having previously been heated to 140°.

Second, one pint (imperial) to 3 gallons of water, which imparts to the water a white colour, or exactly like old milk: this applied to the Peach trees after the fruit is set destroys the aphides that generally infest the trees about that period. A syringe is necessary; and another point must be attended to—thoroughly wetting every shoot and every leaf on both sides. If this be repeated every fifteen days from the first syringing with it to the second week in August, or until the fruit begins to ripen, very little spider will show itself, or any insect either. It is equally efficacious when used to any plants having smooth leaves, but it destroys the leaves of plants that are woolly, downy, or hairy, and so does any composition or liquid that contains soap, unless highly diluted with water.

To clear plants in pots of red spider, take 2 lbs. of soft soap, place it in 8 gallons of water (mix, of course), heated to 140°, dip the plants infested into it for half a minute, let them stand until dry, then dip again in the water at a temperature of 120° for one minute, and the spiders' days are numbered. If the plants are infested with brown scale, rub the infested parts with the hand, dipping a time or two more than for red spider. By these means we get rid of the brown scale and mealy bug also. The further this solution is from Geraniums and plants having similar foliage the better.

Both these above mentioned are difficult to apply to some plants, as Melons, &c. With Melons that are pestered with red spider, I treat as hereafter—1 lb. of flowers of sulphur mixed (by hand) with 3 gallons of lukewarm water (110°). On a fine day having a cloudless sky, at 2 o'clock in the afternoon precisely, I take a wide-rosed syringe and fill it with water (for if the sulphur is properly mixed it sinks to the bottom) from the bucket containing the liquid, forcing it out into the same (this makes it all alike), the next two syringefuls are sprinkled on the plants. The next one returns to the bucket as before, and so on until the plants are thoroughly wetted. Then shut up close, shading with a single thickness of tiffany, and treat them the next day in the usual way. The day after that let the plants be lightly syringed overhead (omitting the necks of the plants), afterwards shutting up close at 2 P.M., &c., as before; following this course for a week, and we shall find our fruit will ripen, and if not too late a second crop will follow.

However, if the spider has made such havoc that the leaves are half a yellow or greenish-white colour, we can then destroy the spider; but to cause these leaves to become healthy and green, so necessary to ripen the crop properly, this remedy will not do that, neither am I able to point out any nostrum that will. The above is equally efficacious for mildew on any plants whatever; and, used for that purpose, there is no need of shutting up the house, but only syringe it on (which is done in half the time as dusting with sulphur is), giving more heat and ventilation, but less moisture.

This year we have had more red spider than ever I remember; but having sulphured the flues and pipes it has been kept within [illegible] in the orchard-house, where, owing to water being scarce, the trees were seldom syringed—in fact, they had not plenty at the roots, so the spider held absolute sway all August and into September against sulphur-basins or evaporating-troughs; when water being plentiful the spider at last yielded. I used water freely by syringing, for there was no fruit to spoil, owing to the wood never ripening last season, the frost killed greater part of the wood, no bloom at all showing the trees were cut in; but there is every prospect of a fine bloom next season, notwithstanding what red spider has done for us.

With your correspondent "E. T.," I believe moisture combined with a healthy growth will greatly assist any remedy for destroying red spider, or any other disease, be it insect or virus. —George Abbey, *Gardener, Horton Hall, Bradford, Yorkshire.*

POTATOES WHICH HAVE NEVER BEEN DISEASED.

After the notice you were pleased to take of my communication, and inserting it on March the 5th, No. 649, page 333, of The Cottage Gardener, respecting the Potato disease, I was fully determined to forward to you for your notice and inspection this autumn a sample of a variety of Potatoes out of many I have unremittingly and carefully cultivated, and tried various experiments with, to find, if not a preventive, a check to the disease; and if you will be pleased to describe the Potato I forward in The Journal of Horticulture, at your convenience, some of the numerous readers and subscribers, I have no doubt, will recognise it. The same variety has been grown in the west of England for many years, and in different counties it goes by different names, as the Rough Red Kidney, the White-eye Kidney, the White Red Kidney, &c. It is not the name alone, colour, or shape, I wish to call to your notice; it is the only variety I have found to be free from the disease, when all others are more or less affected. This and last year with me it was entirely free. The sample I forward is a true sample taken out of the bulk after being lifted, and grown amongst several other sorts in the same garden, and very often I plant two varieties in the same row, to test the effect of the disease upon different varieties; and I do without hesitation avouch, that if the variety was carefully selected and cultivated in the way I described in The Cottage Gardener in March last, the disease would be less heard of. I shall be most happy to send two or three pecks to you, so that you can place them in different individuals' hands to try them next year. The impression upon my mind ten years ago, when I first commenced a series of experiments in cultivating the Potato, was that not all and every individual variety of that valuable root was equally liable to a disease that has baffled science to find a cause or a cure. Surely there are, with judicious care in selection and cultivation, some that can be saved and be proof against the disease.—J. Down, *Gardener, Woolston, near Wincanton, Somerset.*

[The variety nearest resembling the sample you have sent is one we have not seen for some years. It was known to us as the large-eyed variety of the Perthshire Red, and like yours was kidney-shaped, medium size, dull red, rather deeper coloured round the eyes, which were deeply sunk, and stalk end deeply basined. If any of our readers wish to try this undiseased variety, they must apply to Mr. Down, taking care that he is not subjected to any loss. The Apple enclosed with the Potatoes is the Downton Pippin, and the Pear the Chaumontel grown on a standard tree.—Eds. J. of H.]

PERMANENT GREEN GARDEN-EDGING.

I will premise by saying few persons are more attached to their flower garden than your present correspondent, or expend, so far as a quarter of an acre will allow, a greater amount of time, expense, or trouble in its adornment. I, unfortunately lie at the foot of a hill, and from this cause the severity of winters affects my neighbours and self somewhat heavily. Although not disposed to give way to trifles, there is one mishap, that by almost invariable annual repetition quite upsets further persistency.

The Box edgings die quite away nearly every year, and for many years past I have annually been compelled to incur several pounds expense in replacing it at spring-time, simply with the certain result of seeing it as bad as before, in less than the same time next season.

I confess I like Box far better than anything else I have yet seen as edging, although I have visited the gardens of many of our aristocracy. It looks more like the country, the usual grey-coloured garden edge-tiles appearing to my mind very town-like —in fact, too much of the causeway character to suit my fancy. Several of my close neighbours have replaced the Box to their flower-borders with iron edgings, grey stone ones, and even boarded ones. The latter party by painting has certainly produced the best effect of any, but the paint, naturally, is gone almost as soon as finished, and the dampness of the material, now it is fixed, prevents its successful repetition. As I shall want some hundreds of yards to refit my own little place, I am anxious to do so in the most effective and permanent way possible, and should feel greatly obliged if you could advise me how I could get a plain, neat-looking border-edging made at the outset of a nice clear green colour, without painting, as I fancy that colour to be most suitable as a relief to flower-borders, and wish to get it so indestructible as to require no further attention after once laying down. Again, if you can devise anything preferable for the purpose of flower-borders exclusively, I shall, as will many others in my locality, esteem the information as a peculiar obligation.—Edwd. Hewitt, *Sparkbrook.*

[It so happened the very day this note arrived, that we had submitted to us for our opinion an edging made of green glass. It is very stout, is pleasing to the eye, and very durable. Moreover, it is cheap, for the manufacturer says that it can be made for 1*s.* 6*d.* per yard. We shall say more upon the subject so soon as we see the manufacturer again, and find that he is ready to execute orders.—Eds. J. of H.]

TROPÆOLUM FOR A WIRE FENCE—FLOWERS FOR EDGINGS AND BEDS.

Which would be the best species of Indian Cress to cover a low wire fence 20 inches high? Would Cattell's Dwarf sorts answer?

Would a bed of yellow Calceolarias look well if edged with Perilla nankinensis pegged down? Or how would Cineraria maritima look also pegged down, or Saponaria calabrica, or Cerastium tomentosum?

Can Œnothera macrocarpa be depended upon for making a good flowering bed?—Senateur Vaisse.

[Elegans would be the best of all the Indian Cresses to cover a wire fence 20 inches high and up to the height of 4 feet. Cattel's new seedlings are of the Tom Thumb tribe and would not do, but they are good bedders.

Perilla would make a good edging to a bed of yellow Calceolarias. Cineraria maritima would also make a good edging, and so would Cerastium tomentosum; but Saponaria calabrica would not make a good edging to any flower-bed that we can think of.

Œnothera macrocarpa may be depended on for constant flowering after the first season of planting the bed, but not for the first season, unless the plants were very good and out of pots.]

CULTIVATION OF PLUMS ON THEIR OWN ROOTS.

As the season is approaching for putting in Plum cuttings, I now remind the readers of The Journal of Horticulture, by giving a few more details than were written by Mr. Beaton last year. When corresponding with him on the subject, I told him it was the best way, and will now give my reasons for having come to that conclusion.

Among the first ideas that young gardeners imbibe is that certain sorts of fruit-bearing trees must be grafted upon some particular stock, and for the Plum there are several usually employed. These which I am acquainted with and have used are six, not including seedlings. These six I have grown and fruited for observation, such as their hardiness, durability, fruitfulness, and propensity to throw up broods of suckers.

It is evident that the Plum has a natural tendency to send up suckers, and this peculiarity may be strengthened—first, by propagating in a way favourable to that tendency; and secondly, by grafting on them a variety with a different constitution, for however free the Morocco may receive the crude ascending sap from a stock of the White Pear Plum, it does not thrive with the elaborated descending sap of the Morocco: hence the stock resorts to its natural resources in throwing up suckers. Some of these stocks are considered to bring the choice sorts into an early bearing state. This can only be the case where the stock cramps the natural energies of the graft, and it is seldom that the stock and graft swell of an equal size, and although not always the case, it is generally so that the stock is the smallest. There is only one variety of Plum-stock that I have practised with that invariably swells larger than the graft; but even this stock that receives freely the descending sap of others, gives no advantage over those trees on their own roots, for with such the cultivator has a whole tree, root, and top, with one constitution. Budding and grafting I look upon as a necessity, from the facility they offer in propagating on an extensive scale; but only as such, for when injudiciously applied they cause the greatest blight that befalls the fruit.

The advantages of a Plum tree on its roots are a sound healthy tree, with every appearance of being long-lived, coming naturally early into bearing, surpassed by none for productiveness, with no rubbish of suckers to pester the cultivator, and the easiest way to propagate it. And this last I look upon as a boon to the amateur and cottager who have a favourite Plum they wish to increase, but for want of a stock, or, more probably, their ignorance of grafting, they are deprived of the pleasure and economy of raising their own tree; and the chances of success that a novice would have with a Plum-graft and a good cutting are too far apart for comparison.

For preparing and planting the cutting, take a two-year-old shoot, the stronger it is the surer of growing, and the sooner a fruiting tree. A mere strawmoat of a twig will not do; it must be of a certain substance, containing a store of the material to send down to make roots before the leaf calls for supplies. As a guidance, no shoot ought to be used less than half an inch in diameter at the base. Shorten all the side shoots or fruit-spurs to half an inch or an inch, take a small slice of bark off at opposite sides at the bottom 3 inches long, or more.

The first effort the cutting makes to root is to callus round the edges where the bark is taken off, and from this callus spring tufts of roots. However, they will root without this preparation; but it has an advantage. Prepare a piece of ground by digging and breaking it fine, then firm it down by trampling; into this force the cutting 8 inches, observing that it is perfectly firm. If the ground is light a good mulching will be a benefit.

The season for putting in cuttings is an important point, although, like many other gardening operations, it does not require to be done on a certain day or week to insure success. To be early is to err on the safe side, and it is better to put in the cutting by the middle of September than leave it to the latter end of December, or later. I have generally confined myself to the fall of the leaf—about the second week in November, with success. If they were put in where they are not intended to remain permanently, they gain strength faster by remaining two seasons in the same place before transplanting. The first season they are weak, much resembling a tree that has suffered from transplanting, after this they rapidly gain strength from year to year.

What wood they make the first year should be cut back as when the cutting was prepared. After this pruning, if an object is to get them into an early bearing state, use the knife as much as possible in the growing season. All that is required is to form the tree, whether for the wall, dwarf, or full-grown standard. The latter when full grown require but little pruning, keeping them thin of wood is, however, necessary. For the full-bearing wall tree the knife must be freely used, by cutting out old and exhausted wood, and laying in a yearly supply of young shoots. This is the sound principle of Plum training, for it insures a crop, and that of the finest quality. The shoots must be laid in their whole length, for if shortened the chances are a crop of wood instead of fruit would be the result. It is the spurs that the young wood makes the second season that can be depended upon. These fruitful spurs are those directed to be cut back when the cutting is prepared, and it is probable this fruitfulness and the rooting of the cutting may be traced to the same source—viz., from the two-year-old wood being abundantly stored with organisable matter, for I have observed that the blossom-buds left on the cutting expand with the appearance of strength as if they had never been removed from the parent tree, but it is seldom the fruit sets, and only on two occasions have I seen it come to perfect[illegible] turn to the pruning. Avoid shortening the fruit-spurs [illegible] often happens that all [illegible] shortened there is no leaf left beyond the fruit, which is essential for having high-flavoured fruit. All that are longer than 3 inches or 4 inches, if foreright, to be cut clean off, the others thinned out and fastened to the wall, and at the next winter pruning what is not wanted to replenish the tree with wood cut them clean off. By this, old spurring is avoided, and by using the knife freely the tree is kept in a vigorous, healthy state.

If a Plum tree does not make young wood the fruit will not be of the first quality, and such a tree is liable to become the prey of insects, from being in a stunted, unhealthy state, arising from some cause or other, and too often from being worked on a stock which has become paralysed from the position it is placed in: hence an advantage of Plums on their own roots.—A. M'Kelvie, *Stevenstone, near Torrington.*

LONDON AND ITS NEIGHBOURHOOD ONE HUNDRED YEARS AGO.

If a graphic and minutely particular account of any country, its inhabitants, and their manners and habits is required, employ for its preparation an intelligent foreigner about to visit it for the first time. To him everything will be novel and be noted; whereas if you employ as your reporter an old inhabitant of the country, he will leave uncriticised the greater part of subjects of especial interest, for no more valid reason than that he thinks every one else must be as well acquainted with them as himself.

No better illustrations of this truth can be obtained than from two volumes now before us, published in the year 1772, entitled, "A Tour to London, or New Observations on England and its Inhabitants. By M. Grosley, F.R.S., Member of the Royal Academies of Inscriptions and Belles Lettres." His descriptions are so minute, and afford such ample materials for contrasting what we were then with what we are now, that we feel assured that our readers will be as much amused as we have been with the extracts we shall place before them. Before doing so we will briefly relate who was their author.

Pierre Jean Grosley was born at Troyes, Nov. 18th, 1718. He lost his father, a celebrated lawyer of the district, when he was fourteen years old, and like many other youths of ardent temperament, he seemed to fear himself, and wished to enter the Oratoire. From this he was dissuaded, and he went to Paris and fell in with men very different from ecclesiastics—Voltaire, Piron, and Le Franc. Returning to Troyes he succeeded to his father's practice, yet found time for his favourite pursuits—*belles lettres*, the arts, and travelling. In 1745 he went to Italy, and being employed in the administration of the army, was in the campaign of 1746. Again returning to Troyes, he was made syndic in 1751. He afterwards accepted the grand mayoralty of St. Loup, and was also bailiff of Chasses and Vancharsis. On his uncle's death, by which he inherited 24,000,000 francs, though not rich, he gave a portion to his sister, and devoted a large portion of his income to the erection of busts to the memory of his illustrious countrymen. Adverse fortune compelled him to abandon this expense, but he never gave up his fondness for literary pursuits. *Paix et peu* (quiet and little) was his maxim. In 1758, he the second time visited Italy, in 1765 England, and in 1772 Holland. He died Nov. 4th, 1785.

"Embanking the Thames.—They will proceed by degrees to clear the river, to open communications with it, and, in fine, to border it with quays, in the very body of which it will be an easy matter to contrive proper places for loading and unloading. These quays being once opened, the first noblemen, the wealthiest merchants, the richest of those who undertake to fit out privateers, allured, some of them by the grand and noble prospect, others by the conveniency of commerce, will come to build upon the banks of the Thames in emulation of each other; and that river will at last be as much frequented as it deserves. Then the improvement of London will resemble that of Lyons. So long as Lyons was confined to the quarter of Fourviere, its construction prevented it from having a view of either the Saone or the Rhone, which its first founders endeavoured to procure. Since it descended to the confluence, the quays, which it has opened itself upon both rivers, have given it all the advantages that might result from its situation, the principal of which is, being out of danger of the contagion of the plague and other epidemical disorders by a free circulation of air.

"Such are, with regard to the city of London, the views and hopes of the architect of the new bridge, as he explained them [illegible] me himsel[illegible] ll even leave them,' added he, 'a model of what they are capable of doing in this way, by joining my bridge to the old one by a quay, so that there will be nothing more to do but to continue it, when reason has at last overcome old prejudices.'

"The bridge which this architect is building has not yet received a name. Some are for calling it Pitt's bridge, from the present English Demosthenes; those in the party opposite to Mr. Pitt are for calling it Blackfriars Bridge, from a monastery that had been demolished in the place which it occupies. Whatever may be its name, it will surpass even Westminster Bridge in boldness and in the magnificence of its decorations. It was to have been built in five years, during each of which the parliament assigned the architect 300 guineas. Various accidents and obstructions have protracted the building of it, which in 1765 was in its fifth year."

"Dirt of London—English Gravel.—In the most beautiful part of the Strand, and near St. Clement's Church, I have, during my whole stay in London, seen the middle of the street constantly foul with a dirty puddle to the height of 3 or 4 inches; a puddle where splashings cover those who walk on foot, fill coaches when their windows happen not to be up, and bedaub all the lower parts of such houses as are exposed to it. In consequence of this, the prentices are frequently employed in washing the fronts of their houses, in order to take off the daubings of dirt which they had contracted overnight.

"The English are not afraid of this dirt, being defended from it by their wigs of a brownish curling hair, their black stockings, and their blue surtouts which are made in the form of a night-gown.

"To enable the reader to judge how frequently this daubing must happen, it will be sufficient to inform him that the pavement of London is formed of stones just as when taken out of the quarry. These stones, which are almost entirely round, have neither tail, foot, nor any part so formed as to stand upon; they roll about and hit one another incessantly upon a bottom, which is nothing else but a heap of old dirt. The whole art of the pavior consists in placing these stones as near each other as possible; yet, bad as it is, this pavement is exceeding dear, there being no materials for it in the neighbourhood of London, but sand, gravel, and chalk. With regard to the freestone pavement, the materials of it are brought at a great expense from the extremities of the kingdom, and it is one of the dearest commodities in London. If we may believe a story told by the people of London, Louis XIV. offered to supply Charles II. with freestone to pave his capital, upon condition that the English monarch should furnish him with that fine gravel with which the English strew the walks in their gardens, and which when well rolled assumes the smoothness of a bowling-green.

"Means, however, have been found to pave with freestone the great street called Parliament Street, which reaches from Westminster Abbey to Charing Cross. The fine street called Pall Mall is already paved in part with this stone; and they have also begun to new pave the Strand. The two first of these streets were dry in May, all the rest of the town being still covered with heaps of dirt. It was even customary to water them as well as the bridges and the high roads in the neighbourhood of London. This has been a practice in England time out of mind, and was some years ago introduced at Paris by Joseph Outrequin."

WHAT TO LOOK FOR ON THE SEASHORE.

(*Continued from page 502.*)

Crustacea—(*continued*).

The Banded Shrimp (*Crangon fasciatus*).—Our knowledge of this pretty little specimen, which is indigenous to our coasts, is due to Professor Bell, who found three of them amongst some small Crustacea taken in Salcombe Bay, Devonshire. The Banded Shrimp very much resembles the common Shrimp, although it is smaller, and distinct in other particulars. Its chief peculiarities, however, are "a remarkable brown band across the fourth segment of the abdomen, and a spot or two of the same colour on the sides." It measures in length about six-tenths of an inch.

The Sculptured Shrimp (*Crangon sculptus*).—The shell of this strange creature is rough, having five or more raised lines, each armed with two or three small teeth. It derives its name from the distinct sculpture seen on the abdomen. Its length is about seven-tenths of an inch, and has been dredged off Weymouth. There are several other species of Shrimp—for instance, the Spinous Shrimp (*Crangon spinosus*), the Three-spined Shrimp (*Crangon trispinosus*), and the Two-spined Shrimp (*Crangon bispinosus*); but they are very rare on our coasts—so rare, indeed, that of the last two kinds Professor Bell had not seen a single specimen; the mere mention of them will, therefore, be sufficient.

We now proceed to the

Prawns (Genus *Palæmon*).

The greater number of species of this genus are of small size, although in the tropical seas some have been known to reach a foot in length. Professor Bell gives an account of four British species, each distinct from the other; we will, therefore, proceed to examine the four enumerated by him.

The Common Prawn (*Palæmon serratus*).—Although a description of these very familiar creatures would seem almost superfluous, still a few of their points must be mentioned for the satisfaction of such as may meet with them in their wanderings; as it is hardly necessary to remark, an animal of this description, in the fulness of life and activity, presents a somewhat different appearance to that which it assumes when cooked and stretched out upon the breakfast table.

The shell of the common Prawn is even and rounded. It has a long beak armed with seven or eight teeth; the eyes are round and large; antennæ very long, about half as long again as the creature itself. It has, as usual, five pairs of legs, the first, or anterior pair, very slender, the second extending nearly to the extremity of the beak, the remaining pairs simple and slender; the false feet of the abdomen extremely long; the last joint of the abdomen narrowing to a point and armed with teeth, the tail-plates provided with long hairs. Its length is ordinarily about four inches or upwards. In colour it is of a bright semi-transparent grey, lined and spotted with grey of a much darker hue.

The common Prawn is found in considerable numbers on all our coasts. As before mentioned, loads of them are taken in shrimp-nets, and sold as Shrimps in several places. These are the young of the Prawns, which retain the name of Shrimps even on reaching a middle size, only acquiring their proper nomenclature when they attain the largest dimensions. Their favourite haunt is the clear bright water in the rocky parts of the shores. The ordinary mode of taking them is by means of pots resembling the lobster-pots, but made of more delicate material. The chief supply for London is furnished from the Isle of Wight and Hampshire coasts; but as they deteriorate in the interval between the time of their capture and that of reaching their destination, a real treat of Prawns must be enjoyed in the fresh bright precincts of Shanklin and the Undercliff.

Small Prawn (*Palæmon squilla*).—This specimen chiefly differs from the former in its size, not being above half the length; the other distinctions between the Palœmon squilla and the common Prawn being so slight as scarcely to warrant notice, save for the purposes of scientific examination. They chiefly consist in the beak, which is almost straight, having but a very slight curve towards the end; whereas that of the common Prawn is very long, and ascends after a progress of about half way. The length of this creature is about two inches, and is to be found on most, if not all of our coasts, particularly on that of Devonshire, where, indeed, it forms the chief part of the Shrimps sold there.

Leach's Prawn (*Palæmon Leachii*), is another of the creatures sold at Poole as a Shrimp. Its general appearance to a casual observer is similar to that of both the preceding specimens; but on a closer examination a difference will be found to exist in the formation of the beak again; but unless carefully examined the distinction of formation is not perceptible. A more marked variation, however, is found in the beak of this specimen being covered with reddish spots, which are entirely wanting in the Palœmon squilla.

Variable Prawn (*Palæmon varians*).—This is a small specimen by no means so common on our coasts as those previously mentioned. It has fewer teeth on the beak, which is perfectly straight and sharply pointed. The antennæ are also shorter than in the other specimens, not exceeding the length of the creature's body.

We will now take a view of the Lobsters and Crayfish, which also belong to the class Decapoda (ten-footed), and Macroura, (or long-tailed).

The Common Lobster (*Homarus vulgaris*).—The body of the common Lobster is round and thick; the cephalothorax long and compressed at the sides; the beak is short, and armed with four teeth on either side; the eyes are round and comparatively small; the abdomen is semi-cylindrical, the sections smooth, and terminating on each side in a flat triangular plate; the tail is broad; the anterior legs very large and powerful; they are unequal, however—one being larger than the other, the larger one having strong tubercles on the inner edge of the fingers, the smaller one being furnished with small sharp teeth instead. The other legs are thin and weak, the second and third pairs having two fingers, the fourth and fifth only one.

In colour the common Lobster is usually of a dull, pale, reddish-yellow, spotted with blueish-black. It is taken on many parts of the coast, more particularly in rocky localities. Southampton, Bristol, Jersey, and Guernsey supply a vast number to the London markets. Scotland, the Orkneys, also, furnish a large quota; but by far the most considerable number is sent from Norway, whence it is said we receive 600,000 during the season, which extends from March to August. Lobsters are by no means migratory in their habits, never straying far from their birthplace; the discovery, therefore, of a new settlement is a lucky thing for the fisherman. With regard to the casting of the shell, we shall not have any necessity to add anything to what was said in a previous chapter.

Lobsters are incredibly prolific; but the great extent to which the young ones fall a prey to fish of various descriptions serves to keep the race a little within bounds.—W.

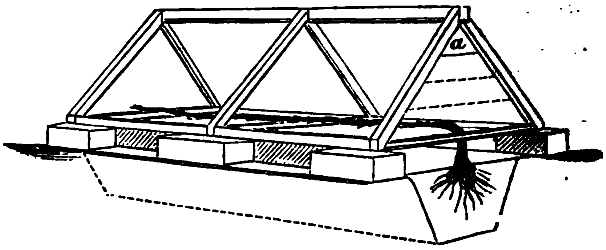
(*To be continued.*)

GROUND VINERIES.

I have the great pleasure of sending you some ripe Grapes from my "Ground" *ci devant* "Curate's Vinery." From the first I felt a strong impression that these useful, cheap structures would be a great boon to us small gardeners. It is, therefore, with great glee that I send you some berries of Black Frontignan and ditto of Chasselas Noir Grapes. Neither of these are early sorts, yet I think you will find them ripe and of good flavour. They would lie on their floor of slate for another month and become dead ripe; but I have thought it better to send them now (Sept. 25), so that you might judge of the ripening power of these glass ridges. As I am a fortnight later than the western and southern suburbs of London—say Fulham and Chiswick, I feel tolerably certain that Black Hamburgh Grapes would be fully ripe now in those neighbourhoods; for in my ground vinery adjoining that from which I have gathered the fruit of Chasselas Noir are some Hamburghs fully coloured, which will be ripe in a week. The Hamburgh Grape ripens in the open air in the south of France about the second week in September; so that with our glass and skill we are not much behind a climate so favoured. But how gratifying is the thought that good Grapes may be grown in all our London suburban gardens with a sunny aspect in the highest perfection, with the aid of a few bricks and a ridge of glass. May I, therefore, hope that you will repeat the figure and description you gave in your Journal? You have many new readers, and every one ought to see the method and as soon as possible practise it. There is now no doubt, no fear.

To Dr. Samuel Newington, of Ticehurst, the horticultural world is indebted for this most simple yet efficient method of growing Grapes. His method was, however, different to that which I practise, and from a vinery under which system I send the Grapes for you to taste. "Sigma's" invention, which Mr. Rivers named "the curate's vinery," was a ridge of glass placed over a trench or furrow lined with slates; over this trench the stem of the Vine was suspended by cross-pieces of wood or iron, and the bunches of Grapes were to hang in the trench, so as to be a little below the surface of the adjoining [illegible]. My vineries have no trench, but are merely ridges of glass placed on bricks, the soil under the ridge being paved with slates. On these the Vine rests, and the bunches of Grapes lie; [illegible] wing to the excessive heat of the surface on which they [illegible] they ripen early and thoroughly. Let me earnestly advise all those who love ripe Grapes (and wh[illegible] does [illegible] and who have no vineries, no garden [illegible] nd, above [illegible] money to spa[illegible] glass [illegible] a comfort they are capable of being made to the proprietor of a small garden, who could have two or three fine Black Hamburgh Vines, each 14 feet long, and each capable of bearing twenty bunches.—Muscat.

[These Grapes were of a jet black colour, perfectly ripe, and the muscat flavour of the Black Frontignan was quite full. This is an admirably simple way of growing Grapes. Below are the figure and description our correspondent refers to.—Eds. J. of H.]



"Place two rows of bricks endwise (leaving 4 inches between each brick for ventilation) on a nice level piece of sandy ground, and then paved between them with large slates ('duchesses') placed crosswise. On the bricks place two of the ridges of glass, as given in the foregoing figure, each 7½ feet long, and thus form the vinery 15 feet in length. One Vine will in the course of two years fill a vinery of this length; but to reap the fruits of the project quickly, plant two Vines, one in the centre, the other at the north-east end; for these structures should stand north-east and south-west."]

SUCCESSFUL STRAWBERRY CULTURE.

In fulfilment of my promise, I now communicate to your Journal a method of growing Strawberries, the most successful I have hitherto adopted, and which, I consider, insures a crop of extraordinary productiveness at the least possible expense and trouble.

In the preparation of the ground previously to planting, the usual course of double trenching and well mixing good rotted manure is to be decidedly recommended, and the plants to be set in rows 30 inches apart in the spring, having been first planted in a nursery-bed in the previous autumn. I consider this advisable, because in the spring any weak plants may be repotted, and a regularity of plant secured. Nothing more that season is necessary beyond occasional watering after planting, and care taken to clear away the runners, and avoiding fruiting as much as possible. The second spring after planting I recommend, just before the flowers open, a thorough watering with liquid manure, say two good-sized watering-pots, to be given to the square yard. Let it be poured over the whole surface of the soil, and as the watering is proceeded with, let a quantity of bean chaff be ready, with as much dust in it as comes from the dressing-machine where the Beans are winnowed, remixed with it. The dust having been separated from the chaff in the operation of dressing the Beans, let the whole surface of the ground have of this mixture at least 3 inches in depth applied, and close up to the crown of the plants. After this let some wheat straw, bean straw, or clover seed straw (the latter I prefer, as it is the more sightly), be cut into one-inch lengths with a chaff-cutter, and let this be sprinkled on the top of the bean chaff to keep the fruit clean; and now no more watering will be necessary for this season, for no storm will penetrate the covering, and no sun will evaporate the moisture. A tremendous thunderstorm passed over my bed of Strawberries last year, but it did not percolate through the covering beyond half an inch, though, of course, it proved beneficial to the foliage.

The chaff I laid on this spring is now decaying into a fine black leaf mould, exciting the Strawberry-roots to increased action, and laying the foundation of increased productiveness for next year. Although my fruit this year was extraordinarily large, I anticipate increased size next, in consequence of the benefit to be derived from this leaf mould. I by no means recommend its application before the winter sets in, as it might encourage wireworms and other insects, but just as the Strawberries are getting into bloom.

[illegible] some of your readers it may be difficult to procure the bean chaff; but any one residing in a neighbourhood where Beans are grown, could easily procure it of the grower at about 2*d.* per bushel, and who would probably supply him with the cut chaff at the same price. This application may be thought rather expensive, but it must be remembered it is answering two purposes—doing away with the trouble and cost of repeated waterings, at the same time giving a coat of manure highly conducive to increased production of fruit. My attention was first drawn to the stimulating power of the bean chaff by having seen the effect of some I had directed to be thrown on a pasture, which was surprising, and which led me to direct its application to my Strawberry-beds.

I have now given you as concisely as in my power a method which I can practically recommend to your readers, and trust that many who, with myself, have received the most courteous and practical replies to their inquiries through your Journal, may in return give any information in their power which would assist the conductors, and at the same time afford acceptable information to the subscribers to THE JOURNAL OF HORTICULTURE.—A. GORDON, *Crystal Palace.*

GERANIUM CUTTINGS—VERBENA LAYERS.

Do Mr. Beaton's remarks on striking Geranium cuttings in September and October apply to striking under a hand-light in the open borders, or in a cold frame, or, at all events, without heat? I presume it can only be meant where heat can be given, and the late-rooted cuttings kept in a warm greenhouse through the winter, and not where they could only be kept just free from frost.

Will cuttings taken up from the borders now (just rooted) keep as well through the winter by putting eight or ten together in a large pot or deep pan, as separately in small pots—no warmth in either case?

And can well-rooted Verbena layers be kept through the winter in a cold frame or cold conservatory?—A LADY.

[After the middle of September, Geranium cuttings are not made by gardeners under hand-glasses in the open borders, because the frost would be upon them ere they rooted. Late autumn cuttings of Geraniums are always set in pots, middle-sized pots, or 48's and 32's; they are planted round the sides of the pots as thick as they will stand, and none in the middle of the pot. The pots are then put in a cold frame, or in a pit or house, as the case may be, but they never want bottom heat nor much watering. October cuttings should hardly make a new leaf till the new year, and that saves room wonderfully. But a warm greenhouse is a luxury, and the best of all places for Geranium cuttings to winter.

Rooted cuttings taken up now would do better in single pots; but for want of room we are compelled to cram ever so many of them into pots, and those not very large ones.

Well-rooted layers of Verbenas will keep far better in a cold pit than in the best conservatory. The fly takes to them so ravenously in houses that there is no keeping them alive; besides, they seem to like a cool, moist atmosphere.]

WATERING POTTED BULBS—CUTTINGS OF VARIEGATED ARABIS.

WILL you be good enough to inform me, if bulbs (Hyacinths, Crocuses, Tulips, &c.), when potted in soil neither wet nor dry, and to be put in a dark, damp cellar where the mould will keep quite as moist as when potted, should be watered in before put away? or will they be sufficiently moist in the cellar without watering until rooted and brought out? If to be watered, should they stay in the air until a good deal of the moisture has evaporated, before being put in the cellar? and is plain garden mould better for Crocuses than a compost with leaf mould and sand added? Will cuttings of Variegated Arabis struck in September and October live out of doors and unprotected through the winter?—G. L.

[Hyacinths, Tulips, Crocuses, and all other bulbs without roots at the time of potting should be put in soil between wet and dry, and if the soil could be kept in that state as your damp cellar will do, the pots ought not to be watered till the leaves are seen; but you must take care that the dampness of the cellar does not cause the top part of the Hyacinths to mould. Crocuses will do in any good garden soil just as well as in the best prepared compost. We believe cuttings of the Variegated Alyssum will root out of doors, if they are put in from the middle of September to the end of November. We have put some in last week, and we have many more to put in yet. The cuttings ought not to be put in close together, as the soil between them must be gently pressed down after frost. Put them in single rows 3 inches apart, and 1 inch clear from leaf to leaf in the row, and you will be on a footing with your instructors.]

CHOICE WILD FLOWERS.

WE here and there meet with one who grows a few of our rare wild flowers, yet it is only in some secluded out-of-the-way spot where such a rarity can be found. Many of us tread under foot, without the least notice, plants which, if they were more rare, would be highly prized, and cultivated with care and delight.

Our beautiful winter greens, *Pyrola media* and *rotundifolia,* would be grown in our gardens if they were natives of some foreign clime, but being British wild flowers they are neglected, except by a very few who know and value them.

The blood-coloured Cranesbill (*Geranium sanguineum*) is a lovely plant for the cottage garden. Its purplish-red coloured flowers are very pretty; they are about the size of a shilling, and somewhat shaped like a Petunia, and I have known them called by that name. They may be found on the plants from May to the end of September, and in favourable seasons far into October. In a suitable situation the plants will grow a foot high, yet in many are trailing plants; but always form a pleasing object either in front of the mixed border or rockery. It is a plant which will grow in the same situation without any care or attention for a lifetime. I have a plant in my mind's eye which has experienced some rough treatment, yet is still healthy and growing in the same spot where it has grown for more than half a century. I have grown it in pots with protection from cold, but with me it always grows and flowers best in the open ground. It is easily increased by root division or by seed, of which there is abundance this season—my plants are loaded. We number G. sanguineum in our Yorkshire flora. Plants may be found sparingly in many places; but so far as I am aware it is never found growing truly wild, except on the limestone, and in our gardens seems to grow and flower best where there is a mixture of old lime in the soil.

Geranium lancastriense (Lancashire Cranesbill) is rather smaller in the foliage than the preceding; the flowers with me are about the same size, colour white, veined with red. It will grow and flower well in any good garden soil, and is easily increased by dividing the roots in the early part of the growing season. This Cranesbill is not often found in gardens, nurserymen too often sending out G. sanguineum in lieu of it. I have had it sent so from nurserymen. Not having it, and wishing to have it in my garden, a friend who got it in Lancashire kindly gave me a small plant. Those who do not grow these wild flowers in their gardens ought to try them, and I feel assured they will not be disappointed.—RUSTIC ROBIN.

THE VINES IN POTS AT WORKSOP.

IT has been a question from the first whether, according to the wording of the schedule, I was not entitled to the prize. You have, I believe, now opened their eyes to the fact that the schedule was not worded in the proper sense—the thing, you are quite aware, that I always disputed, and which I fully consider entitles me to the prize. It is much to be regretted that the Judges did not turn the Vines out of the pots; they would have seen one Vine (only), had any roots more than 6 inches in length. One Vine only had got away; but not as your correspondents insinuate, from the bottom, for not one root came through the hole; but one pot having a hole in the side, the roots got through against the wall of the pit where the Vine was standing, and run along by it some length. That is the dispute, and in order that I would not act dishonourably, I had every piece of root taken to the Show, well knowing it mattered but little according to the schedule whether it had roots outside the pot or not. As regards the second pot, it would not have been used at all, but it was feared the weight of the Grapes and the iron fork would burst the pot; so the roots of the Vine were brought to the top of the pot in some moss, and the cavity was filled as I before stated with moss and water. The moss did not hide the second pot as stated, for one pot was 2 inches above the outside one. The Vines have been in perfect health, and have only been cut down the day before I got your paper—in fact, I have not quite finished one yet.

It is stated I was present last spring when the schedule was made. I well remember objecting to a prize being given at all for pot Vines in the month of September. I said such should be given in June, as any old woman could grow a Vine in September when Grapes were ripe against the open wall. I did not refuse, as stated, to have a fair statement placed before a competent authority; but as they proposed Dr. Lindley, I said, then I shall also refer to the Editors of THE JOURNAL OF HORTICULTURE, and after being nearly swallowed up by a whole host collected together for the purpose, without asking me to get a friend, although one or two were found amongst the number at last, and one the best plant grower in the county. The Meeting thus broke up.

Another correspondent states the Vines had other support than the soil contained in the pots: of course they had. Could a Vine grower be such a simpleton as to think such Vines, with thirteen bunches each, some weighing 1½ lb., could be grown without artificial aid? No, they had soot water, gas water, and manure water; but not one spoonful of soil beside what was in the pot: they stood only on an old spent tan-bed, containing about 8 inches of tan, and the moss was not put into the pot until the morning of the Exhibition, so that there could not be any benefit derived from that further than keeping them cool.—EDWARD BENNETT.

[Having now given Mr. Bennett space for his reply, this controversy must cease; for it can be carried no further, except to give vent to private feelings, and for such purpose our columns are not intended. Two things by the controversy have been brought to public notice, and, we hope, "settled"—1st, That however the words of a prize list may be worded, the roots of a Vine in a pot must be confined within the pot. Roots in 8 inches of spent tan outside the pot, and watered with liquid manures, would give more nourishment to a Vine than the roots inside the pot. 2nd, That the words of a schedule of prizes should be precise and fully explanatory. A Vine exhibited in a pot with all its roots outside would not have been in defiance of the *words* of the Worksop schedule. However, common sense should have pointed out the intention of the words. And now, let bygones be bygones—they shall be so far as our columns can render them so.—EDS. J. OF H.]

POMOLOGICAL GLEANINGS.

PEARS FROM ORCHARD-HOUSES.—At the Crystal Palace Show, September 4th, in the first class of Pears for flavour were Beurré d'Amanlis and Louise Bonne of Jersey, both sorts understood to be orchard-house fruit. At the meeting of the Fruit Committee of the Royal Horticultural Society, September 10th, George F. Wilson, Esq., sent a dish of magnificent Louise Bonne of Jersey Pears, among the largest ever seen of that variety; they were grown in pots in an orchard-house, but moved out of doors during the summer months. The flesh was very tender, melting, and juicy, and the flavour delicious. The question agitated by some unskilful growers that Pears cannot be cultivated with success in orchard-houses seems disposed of.—AN AMATEUR.

MELON APPLE.—The largest specimen of this fine fruit we have ever seen has been sent to us by George Wilson, Esq., of Gishurst Cottage, Weybridge. It measured 14½ inches in circumference, 4¼ inches across, and was 4½ inches high. The shape was more conical than we have been accustomed to see he fruit; but in regard of flavour there was not the slightest difference from what we have always found it. The flesh was uite tender, and the flavour delicate and excellent. The fruit s more remarkable from the fact that it was grown in a pot. e crop was set in an orchard-house, and ripened out of doors.

NEW LATE PEACH.—We have had submitted to us one of the rgest and best late Peaches with which we are acquainted. It ras received from Mr. Rivers, of Sawbridgeworth, and is called Pêche du Teissier. It measures 10¾ inches in circumference, is f a remarkable shape, being somewhat pinched in towards the alk in the way of a Quince, and very much fl[illegible]ened laterally; [illegible] very marked both on the [illegible] on the side. [illegible] broken streaks of red somewhat resembling Late Admirable. The flesh is very melting and richly flavoured, with a deep dark stain of red round the stone.

KEEPING FILBERTS.—We have within these few days had a parcel of the Kentish or Lambert Filberts submitted to us, which have been preserved for four years, and which are now as fresh and fit for use as they were the first season they were gathered. They were grown by Mrs. Wilson, of The Grange, Worth, Sussex, and preserved simply in jars, in which they were packed close, and kept in the wine-cellar. The nuts were quite sound, and the kernels perfectly plump and sweet.

COMMON PLANTS WITH REMARKABLE OR ORNAMENTAL FOLIAGE.

(*Continued from page* 8.)

ALTHOUGH botany as a science, taken in its most comprehensive sense, has certainly been for some years on the decline, still sections of that science receive their due meed of attention in accordance with the taste public opinion takes in the matter. Some years ago Orchids were all the rage, and most of these were distinct species (not garden varieties) requiring a botanical nomenclature to a certain extent descriptive of the plant, and thereby conveying a little information on the science. Then, again, we have had the extensive Pinus family forming distinct genera and species, mostly all dignified with names expected to be persistent. These two sections of the vegetable family have been followed by a third, which promises by the long array of hard names by which it announces itself to be as extensive a group as either of the others, and still more a botanical class in the fullest sense of the words. It is needless to say the section now alluded to is Fern, which for the variety of forms it takes, as well as the extensive range of climate its members belong to, is certainly deserving the attention it receives at the hands of its most devoted admirers, and much more than it usually receives from the general mass of the public. But it is not for the peculiar merits of the Fern that I now call attention, graceful as all the family are, but merely to point out that there is in reality beauty in other plants as well, which the stirring impulses of poetry have not deigned to notice, and, consequently, their neglect. But as the fashion for fine-foliaged plants will after awhile, doubtless, descend into humble, and what may, perhaps, now be regarded as vulgar matters, and as the foliage of plants suitable to embellish a nosegay, bouquet, wreath, or other fanciful decoration, or the plant itself may be useful in some other ornamental way as a whole, I will here mention a few merely as a nucleus for others to be added to; and if their extreme commonness gives offence to the fastidious flower-gardener or the ardent admirer of Ferns and exotics, I can only ask him to examine the plants I mention either closely, or notice them at the distances indicated, and he will see that true beauty is obtained in other forms than in the much-divided leaf of a Lastrea or an Adiantum, handsome as these plants doubtless are. But Nature presents her beauties in other and more varied forms as well as these; and I hope the short list I here give will receive augmentation from other quarters, as the subject is one well worth general attention.

CANNABIS GIGANTEA.—This is a large form of the common Hemp, and grows 6 feet or more high, with a beautifully pinnated leaf, clustered in a sort of fan-like form at the top of every branchlet, which are pretty numerous but not crowded. The whole aspect of the plant is oriental, reminding one of the Palms we are in the habit of associating with eastern scenery. As a plant nothing is more easily grown. Seed sown in March with other annuals in a gentle heat, and afterwards planted out in May, quickly shows the neatly furrowed character of the leaflets and the general outline of the plants. I believe there are some other varieties, and possibly some one will be presenting us with one by-and-by having the rich claret-coloured foliage of the purple spicant with its own inimitable graceful form. That such may be I have no doubt; only let public taste intimate its wants, and caterers for it will accomplish much at one time thought impossible.

INDIAN CORN OR MAIZE.—This, I believe, to be more generally known than the last named, and differs widely from it in all its features; and its appearance is more striking when viewed some 50 yards or more off than when examined close at [illegible] nevertheless its graceful foliage in a half furrowed, half-curved condition gives it a form at once pleasing and yet tropical, while the terminal spikes of male blossoms are in themselves interesting, though not possessing the high colouring required in flower gardening of the present day; but grown at the back of a mixed herbaceous border, or, what is better, at the opposite side of a piece of water or impassable gulf, it stands out in bold outline to the many plants with which it may be grouped. It is, however, advisable to say that it requires shelter, high winds breaking the foliage. A warm situation and warm summer are also wanting to bring it to perfection; but it will thrive and look well under ordinary treatment.—J. Robson.

(*To be continued.*)

SUCCESSFUL FLOWER-BEDS.

Having read the invitation in your Journal to send a description of our pet bed for the season, I send you the same of my pet which I leave to you to judge the worth of.

The bed is an oval, 18 feet by 9 feet, a two-year-old Canna indica in the centre, then six two-year-old Flower of the Day, three on each side the Canna, then a row of Perilla, then three rows of Flower of the Day, autumn struck, edged with Lobelia speciosa from seed. This is my pet, every plant having done its duty without an exception, and the bed graduates from the centre on all sides. The Lobelia I had about this time last year, but did not sow it till the spring, and first-rate it was; but I have seen some from the same seedsmen that was obtained in the spring that grew so straggling and coarse that it was pulled up, being more an eyesore than ornament. Is this caused by the soil?

Will you please say how an oval bed, 14 feet by 7 feet, will look with amplexicaulis Calceolaria in the centre, Purple King round that, and Mangles' Variegated for an edging? I have seen, too, the notes for and against the Variegated Geraniums out in beds. I do not pretend to judge them myself, but I have just seen a little part of a garden planted with them entirely, each kind in a bed by itself, such as Mountain of Light, Alma, Countess of Warwick, Mrs. Lennox, Golden Chain, Ivy Cup Leaf, and Silver Queen, and they look as fresh as they did at Midsummer. Whilst Calceolarias and Scarlet Geraniums have been cut to pieces by the heavy rain, they look all the better for the washing. The same with my pet, the Lobelia not suffering from the rain like other things.—Scribbler.

[You are quite right, Variegated Geraniums are invaluable in flower gardening. Your pet bed, for instance, is entirely of one kind of Variegated Geraniums, and two neutral plants—the Canna and Perilla.

Your proposed bed of amplexicaulis Calceolaria, kept in its proper place by the upright Purple King Verbena, and the edge of Mangles' will be charming to look at; but put two rows of Purple King close together to make the belt thicker and more strong; also, two rows of Mangles', but do not train it close so as to look like a steel chain round a bull dog's neck, as some do it. If you keep it even on the two sides, it is all the training that Mangles' ever should get. Did you never hear or notice that a whole bed of Mangles' Variegated makes the best telling bed of all the Variegated Geraniums? Such a bed needs only the longest and strongest points of the plants to be stopped and the sides kept out to the shape of the bed.]

THE SUCCESS OF GARDENER SPRUCE.

The key to his success is this: He makes gardening a science, reduces principle to practice, matures his plans beforehand, and carries through whatever he undertakes.

To aid him in his endeavours, Gardener Spruce in his earlier days adopted the following valuable maxims as his guide:—

1. I will perform every operation in the proper time.
2. I will perform every operation in the best manner.
3. I will finish every part of an operation as I proceed.
4. I will complete one undertaking before I begin another.
5. I will always leave my work and tools in an orderly manner.
6. I will clean every tool when I leave off work.
7. I will return every tool and implement to its proper place at night.
8. In general—I will have a place for everything, and everything in its place.

Gardener Spruce is emphatically a "law and order" man, and in being such has acquired what every tiller of the soil has not—namely, the reputation of being a neat and successful gardener. Let others do likewise.—(*Genesee Farmer*).

ENTOMOLOGICAL SOCIETY'S MEETING.

The September Meeting of the Entomological Society was well attended, and a number of interesting and new species of insects were exhibited by various members, notwithstanding the remarkable scarcity of insects in general during the present season.

Mr. Samuel Stevens exhibited two splendid specimens of a new Goliath Beetle, Dicranorhina Layardi, closely allied to D. Derbyana, taken on the borders of Lake N'gami, in Central Africa by Mr. Layard. Also a new species of Paussidæ, allied to Platyrhopalus denticornis, taken at Rangoon, in the East Indies. He also distributed among the members a number of specimens of the rare Beetle, Triplax russica, which he had reared from the larvæ found in a fungus upon an Ash tree.

Mr. Stainton exhibited a specimen of one of the Noctuidæ, Nonagria Elymi, recently described in this country for the first time, which had also been captured at Stettin, in Prussia.

The President, J. W. Douglas, Esq., exhibited a beautiful Moth, Orodesma apicina, which had been taken alive in the London Docks, having been imported from Porto Rico in a vessel.

Dr. Knaggs exhibited two species of Caddice Flies new to this country—Agrypnia picta, from Skiddaw, and Leptocerus fulvus, captured at Ruislin, Middlesex.

Mr. Scott also exhibited four species of Hemiptera, new to this country.

The Rev. F. Orpen Morris exhibited a remarkable specimen of Lasiocampa quercus, having the antennæ much shorter than in the normal condition of the species.

Mr. Frederick Bond exhibited specimens of two very rare British Moths, Lithosia caniola, and Dianthœcia capsophila. And Dr. Knaggs a specimen of a species of Noctuidæ new to these islands from Ireland.

A case of beautiful insects, captured at Dacca, in the East Indies, containing many rare species, was exhibited by Mr. Brettingham.

The Secretary, Mr. Edwin Shepherd, read a second communication from Lord Dunsany on the ravages upon the foliage of Ash and Lime trees in Dunsany Park, Ireland, committed by myriads of the larvæ of one of the Geometridæ, Biston hirtarius. The trees were rendered completely leafless, after which vast numbers of the caterpillars were found crawling upon the adjacent walls.

Mr. Francis Walker read some notes on the habits of various insects, including Chlorops tarsatus, a little Fly found in vast numbers on the roofs of apartments exposed to gardens and fields at this season of the year; also on several species of parasitic Hymenoptera.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Take advantage of favourable mornings for wheeling out old hotbeds and other manures on spare ground, and for getting the ground well trenched and roughly ridged to receive the beneficial influence of the atmosphere. *Asparagus*, when the tops are decayed cut them off close to the ground. The beds to be then cleaned, and afterwards covered with 3 inches of rotten dung or leaves. The alleys to remain as they are, not dug out, as by so doing many of the roots are injured. *Broccoli*, the Cape sorts and Cauliflowers now forming their heads to be protected from frost by covering them with a few of the under leaves, or by breaking down the heart leaves on the head which is forming. Where it is growing very strong it is advisable to dig it up and lay it in trenches in nearly a horizontal position, covering the roots and stems up to the leaves. This has the effect of checking luxuriant growth, and of protecting the hearts of the plants in severe weather. *Brussels Sprouts*, those who grow tall varieties should take off a few of the lower leaves as they become ripe, to encourage the sprouts. *Cabbage*, the quarters planted to be searched for slugs and grubs, and any blanks that occur to be filled up without delay. Those planted out in August for Coleworts to be earthed up. *Endive*, by placing 3 inches or 4 inches of sand on the floor of the fruit-room, vegetable-shed or cellar, and taking up some plants with balls of earth about once a-week in succession and placing them in the sand, where it will blanch beautifully without further trouble. *Lettuce*, continue to plant the Cabbage varieties into frames for winter use. The Cos varieties for spring use should also be planted on a shallow border as soon as they are of sufficient size. *Sea-kale*, gather seed when ripe, and as soon as the leaves begin to decay clear them away. It is necessary to do this as early as possible where it is required for early forcing. *Turnips*, thin the late sowing; but it is not necessary to leave them at so great a distance apart as the spring and early summer sowings. Take every favourable opportunity of clearing the ground from weeds. In many of the best-kept gardens they are troublesome at this season when the ground is usually too wet for hoeing and raking; but these are more especially so where they have been allowed to seed during the summer.

FLOWER GARDEN.

Some spare beds should now be prepared for the reception of Hyacinths, Tulips, Crocuses, Narcissus, Snowdrops, and other such early-flowering bulbs. Crown Imperials, hardy Lilies, bulbous Irises, &c., should now be planted in the borders. Ornamental shrubs, whether evergreen or deciduous, may be removed with every chance of success. No hesitation need take place as to the kinds, provided the ground is properly prepared by trenching, and thoroughly devoid of stagnant water.

FRUIT GARDEN.

The principal operations in this department are the gathering in of the fruit as it becomes in proper condition; making preparations for filling up blank spaces, and trenching ground for orchards and fruit plantations, which should be well done to insure success. Continue to keep the runners removed from the Strawberry plantations; and those that have been some time potted for forcing to be placed in a comfortable situation that they may not get too much soddened with wet. Strong pricked-out plants may still be potted with good success if placed on a kindly bottom heat.

STOVE.

Forcing must be avoided as much as possible: nevertheless, the cold nights must not be allowed to reduce the temperature so as to check prematurely the declining growth.

FORCING-PIT.

Get in an ample supply of all kinds of shrubs fit for this purpose, pot them and plunge them in old tan. This will apply more especially to American plants. All kinds of Dutch bulbs, if not already done, to be immediately potted and plunged in a convenient situation ready to be removed when wanted to the forcing-pit. Lily of the Valley to be potted for the same purpose. Mignonette to be protected from rain and frost, and when advanced sufficiently they may be placed in the forcing-pit to bring them into bloom.

GREENHOUSE AND CONSERVATORY.

In these structures many summer-flowering plants must now be cleared out to make room for early-blooming Camellias, Scarlet and other Geraniums, Cinerarias, Gesnera zebrina, Primula sinensis, Neopolitan and Russian Violets. See that Epacrises are placed in a light part of the house where they will be freely exposed to the sun so as to get the wood well ripened to insure their blooming freely. Examine Heaths or anything else subject to mildew frequently, and apply sulphur immediately the pest can be seen. Any of the late-growing sorts which may be in want of more pot room may still be shifted, but do not expose them to cold winds, and water them, as also the large plants, very carefully, for the roots cannot be expected to progress very rapidly at this season. Take care that the Chrysanthemums are placed near the glass and well supplied with manure water, air to be given to them freely, as anything like close confinement would seriously damage them.

PITS AND FRAMES.

Assuming that all the tender stock of plants is safely housed, and anxiety about the future considerably diminished, proceed with the arranging and removing into any spare cold pits the stock of Pentstemons, Antirrhinums, Linums, Phloxes, Brompton, Intermediate, and other Stocks, and all herbaceous plants in pots that require a little protection. The pots to be plunged in sand or coal ashes, which are both a protection and save much labour in watering during the spring months. If cuttings are taken from Chrysanthemums showing bloom, put singly into small pots, and placed in a gentle heat, they will soon root and bloom beautifully for decorating fronts of stages or any other place where dwarf specimens may be required. All cuttings that are now required must have more heat and air to prevent damping off.

W. KEANE.

DOINGS OF THE LAST WEEK.

GENERALITIES—CHARRING.

COLLECTED all the refuse, prunings, and toppings during the summer into one heap, to be covered with turf and earth and charred as soon as a chance offers, when the smoke will not be annoying. In large places this work can be done at any time, but in small places, and where the kitchen garden is near the mansion, fit times should be chosen for all such work, as nothing is more annoying than the smoke from a rubbish, smouldering, or charring-heap, when it is wafted against the windows of living-rooms. The direction of the wind, therefore, should be watched, and if the family should be absent for a day or two, then is the chance. Our next heap will be made up of mere prunings, Hollyhock-stalks, &c., and things of that kind. Dahlias and other herbaceous plants are generally more fitted for rotting into compost than charring. In charring such prunings, &c., the chief thing is to get them as closely packed as possible, and covered before setting fire to them. If the fire is lighted in the morning, and a few holes left near the top for the smoke, the heap will generally be brought down to manageable dimensions before night. But if the heap is large, it will be sound economy to employ a man to watch it for two or three nights, to prevent the flame finding a vent, for whenever that is the case you will be rewarded with white ashes instead of charred material, so useful for seed-sowing, cutting-striking, and all the rest of it. In managing such heaps, light where you will, the fire will take possession of the top of the heap, and, therefore, the air-holes, to keep up a smouldering, charring combustion, must be made round the top. As soon as you find, by inserting a crowbar, that the material at the top is charred, the holes there must be stopped securely, and a row made all round farther down, and so on, until the bottom of the heap is reached, which will be the last to be charred. We frequently mix sawdust with such heaps, and thus get it charred nicely; but we never attempted it by itself without finding that the trouble exceeded the profit.

RAKING.

But for the longer nights and the heavy dews, we should be obliged to sing out for the want of water. The fields are very dry, and the tanks low; but little watering is wanted now. No better chance could be had for giving the weeds a scuttling; but though the days are hot, the weeds do not flag up very quickly, owing to the heavy dews at night. We seldom allow rakes to be seen on our grounds, but we have scuffled some ground with them after hoeing. Except for the very outside of a flower-bed, and that for the sake of levelling with the head of the rake more than for using the teeth, I would as soon see a donkey in a flower-border as a rake. The one, in general, would do less damage than the other. There is no end to the injury which the teeth of a rake may do under such circumstances, especially when a man would rather play with such teeth round a plant instead of stooping and doing what was wanted with the best rake that ever was invented—his own good fingers. When we want plants to fill their allotted space, we have no notion of dressing the ground until the surface is as hard as a gridiron.

COLLECTING TURF AND EARTH.

We got a little from the sides of a road, but the supply was limited. A small group of trees having to be planted in the park, and to be filled up with under cover, it was found that the turf would be in the way, and we were glad to take a thin paring, though not of the colour nor the consistence we chiefly value. In these days we must often cut our garment according to our cloth, and any garment after all is better than none. This turf we build in narrow stacks 3½ feet wide, and some 6 feet high at the ridge. The ridge may rise from the level about 2½ feet each side. Most likely we shall fasten some turf, grass upwards, on each side of the ridge, but we find if well beaten little water penetrates, even if the ridge has no covering whatever. Such narrow stacks built with turf containing some portion of rough grass will allow the air to pass through them pretty freely, and thus become sweet and partly decomposed without ue waste of the fibre, so that when used the compost porous and open. It is easy to give it consistence by ramming when wanted. Such heaps thus get sweet turning, and it is a great advantage every way when be piled up dry. I should have liked better if the grass, of being rather broad-leaved, had been small and sharp iany needles and pins.

KITCHEN GARDEN.

thstanding the dry weather the Cabbage plants that suche Onions have grown amazingly—almost too much in the stronger they get the more apt will they be to suffer st. Another planting, therefore, will be advisable after the f the month, and if the first stand well there will be no for keeping the second, if ground is valuable and scarce. out Brown Cos, Hammersmith, and brown Cabbage at the foot of walls, and will, ere long, put some thickly otection, in case the weather should be severe. Hoed ed the earth about Lettuces and Endive in turf pits, ey will receive protection in winter. Turned out some sses on an open space of ground, so as to fill them partly uliflowers sown at the beginning of September, and wn after the second week, as sometimes the first are apt prematurely. We generally put nine plants in a hand- in March single them out to four to each light. We erally get them early by using a little protection in nd giving protection in winter only after the plants and re slightly frosted. We shall pot also some hundred the last sowing, giving each a 60-sized pot, keeping the floor of a cold house in winter, giving them a five- in February, and turning out into fine, rich ground at le or end of March. These sometimes beat those under its, but in general there is little to choose between them; s well to have two chances instead of one. Will prick a few inches apart under glass in a frame ere long, and r more out of doors by the side of a wall. When under glasses and in a frame, we cover the ground with r more of rough sand, which is not only a little pro- ainst slugs, but keeps the stems free from rot and spots, eeping them dry, and is also so far a protection against picked up this move from an old gardener in a small en I was a school-boy, and thinking nothing about ers then. I recollect the old gentleman saying, "They let me have a few Cucumber and Melon plants, for they ne every spring for Cauliflowers. It is no use telling their's fail, they would only laugh at me and my sand; here!" And sure enough not a plant was diseased, ry instance of a failure.

MUSHROOM-BEDS.

over and fresh covered Mushroom-beds. Wanting a or a certain purpose, we covered the earliest bed in with wheat straw; and though we got plenty of Mush- found that the straw, as we had often found before, to pull off and unsettle the little ones we wished to but we could not help ourselves at the time. Now dusting with hay remedies all the inconveniences. beds are bearing in-winter, and artificial heat used, ing of the beds is of little consequence; but at this tends to keep the beds moist and cool on hot days, and warm on cold days. We find that the Mushrooms mo quicker with a little covering on the surface, pro- surface is kept firm, smooth, and clean. A good part v-spawned bricks have been removed, the making and nt of which were previously described, and the autumn warm the heap required nothing more to cause the run freely than being surrounded by dry litter. a quantity of Chilis and Capsicums fully ripe, to be ground for cayenne, as little dependance can be placed yenne generally sold. The fruit on the plants will the better from being relieved of the fruit that was

PROPAGATING BEDDING PLANTS.

ruit garden, much the same routine as last week, with tion of gathering some Apples and Pears, that are leed this season. In propagating, we have hitherto tificial heat. As we could not well get all we wanted eaking in upon the symmetry of the beds, the most e take off now will be placed in small pots thickly— f the cutting close to the sides of the pot, and the heads leaning inwards, and placing only one row all round the sides of the pot rather thickly; and these we will give a mild heat to by taking off the soil from Melon-beds, forking over the manure-beds, and placing a little fresh heating material in the bottom of the trench as we go along. The old manure will, therefore, be still at the surface, and be rather dry than otherwise. A few ashes will be placed on the top to plunge or half plunge the pots in, and air will be left on at night, and very often a little all day; a little shading being given in bright sunshine only. The air here, and merely a mild heat, are the valves of safety. We always recommend all such cuttings to be struck cool before the middle or end of September. After October bas set in, however, we should sooner depend upon such a plan for general things than bother taking up and trying to keep old plants. In such a place Verbenas, washed well to clear off thrips, will be struck in ten days, and then should have more air. Scarlet Geraniums are almost the only things worth taking up, unless it be large plants of other things for standards. Even they will strike well in such a place during this month, and will require little room in winter. We should except Calceolarias, they will do better in the cool on a firm surface and a porous bottom. The middle of October is the best time for inserting the cuttings, provided frost does not come previously.—R. F.

TRADE LISTS RECEIVED.

A Descriptive Catalogue of Fruits, by Thomas Rivers, Sawbridgeworth.—Most of our readers are already familiar with this excellent catalogue, the new edition of which, this year, has undergone revision, and received several additions, particularly in the list of Grapes.

A Descriptive Catalogue of Selected Roses, by Thomas Rivers, Sawbridgeworth, is a very good and well-selected catalogue.

Charles Turner's Catalogue of Fruit Trees, Roses, Coniferæ, Hardy Trees and Shrubs, &c., Slough and Salt Hill, near Windsor.—This is a very useful catalogue for those who wish to have the best kinds of the plants it contains, the selection being good and judicious.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications.

We cannot reply privately to any communication unless under very special circumstances.

WINTERING GERANIUMS (*J. L. M.*).—Drying bedding Geraniums, or keeping them in a dry state over the winter, is one of the oldest plans, and under some circumstances it is the best plan. Mr. Beaton has gone so fully into the subject of wintering Geraniums to-day, that we have nothing to add.

EVERGREEN EDGINGS—PLANTING OUT DAHLIAS (*A Young Amateur*).—"Is there any evergreen suitable for a border in addition to Box?" On peaty soil, common Heath; on other soils Thrift, Saxifraga hypnoides, and turf. The Dahlias you name are hardy enough to be planted out, not only by the 10th of May, but just one month sooner, the 10th of April, provided you have the tubers now, and can keep them over the winter. We always plant our Dahlia tubers just like Potatoes, and as soon as the Potato planting is finished in the spring we prepare for planting the Dahlias before they begin to sprout, or very soon after, and that saves nine-tenths of the trouble which some people usually take with Dahlias. Their tubers are quite as hardy as Potatoes, and they may be as safely trusted to the earth quite as early in the spring as Potatoes.

DODDER (*Old Bond Street*).—The plant which is infesting your Lucern is Cuscuta Trifolii, one of the Dodders, a parasite which will overrun the whole crop if it is not arrested. It comes from seed, but so soon as its stem has fixed itself to a plant of Lucern, the stem emits suckers which rob the Lucern of its sap. It is said that the only remedy is to grub up the whole crop and burn it before the Dodder ripens its seed; but we should like as soon as the Dodder stem has decayed from its root, after establishing itself on the Lucern, to have the latter all mown and consumed in some way. The Dodder not having seeded we think the next cut of Lucern would be free from the parasite.

FRUIT-GATHERERS (*A Constant Subscriber, Worthing*).—Apply to Mr. Riddell Crosb Hall Chambers, Bishopsgate Street, London, E C.

Primulas Short-stalked (*Primula*).—We do not think there is anything the matter with your Primula plants. Plants now are apt to be short-stalked: but the reason of that is obvious enough in all plants not firmly established in their pots. If you pick off your present flowers, use rather small pots instead of large ones, so that the pots will be full of roots, the flower-stems will then, we presume, get high enough to please you: therefore in this case the seedsmen, we presume, are not to blame. As to the other case, you should have complained to the tradesman. It is not impossible that your tuber might have been tampered with. Certainly we should prefer a sound whole tuber though smaller, to one cut about in the way you describe. But you should have complained to the party.

Raising Apple Trees from Cuttings (*A Subscriber*).—There is no doubt that not only the Ribston Pippin but all other Apple trees could be propagated by cuttings, if treated in the same way as are the cuttings of other hard-wooded trees. The Bur-knot, the Codlings, and the Joannetting are the most easily so propagated, so far as is known. See what is said in our pages to-day about propagating Plum trees by cuttings.

Making a Vine-border—Stove for Heating (*A Subscriber, Dublin*).—We think your border will be a great deal too rich, even without the sacks of superphosphate and the butcher's blood, especially for Vines to be forced early. We should prefer giving the superphosphate as a top-dressing if the Vines were not strong enough afterwards. We should say make your border three-quarters of good turfy soil, with fresh but sweet soil to plant in, half of a part lime rubbish, and the other half bones and dung, but chiefly bones. This, with good drainage, will grow fine-flavoured Grapes. You may add a little garbage, if you prefer size to quality, but chiefly on the surface. The kinds mentioned are very good down to Black Prince. We do not know Gros Colman or Duc de Magenta. Gros Maroc, Muscat St. Laurent, and Chaptal, are said to be new Vines of excellent quality; the Muscat growing like a Muscadine, but with something of the flavour of a Frontignan. We have no doubt your arrangements will answer. For a small lean-to vinery, 20 feet by 11 feet, an iron stove, or, better still, a small brick stove, will keep out frost; but until you are up to the management you must not attempt to force much. Cannot you detect why the flue will not heat properly, and thus save yourself all this bother? We have scarcely met with a flue that we could not make work with a little alteration, if the alteration was possible. You would see this spring that Mr. Rivers forced a house of Roses double your size with an Arnott's brick stove. Remedy the flue if you can. If the bars of the grate are 18 inches below the bottom of the flue, and the flue rises the least from the furnace to the chimney, it can scarcely help itself—it must draw. We should have liked the ventilators in the back wall to be nearer the top than 2 feet from it; however, if you have plenty of them it may do without opening the top sashes. We can say nothing satisfactory, as we know neither the size of the house, nor the size of the ventilators. For common purposes you would need no ventilation lower down. In orchard-houses such ventilation is desirable.

Flowers at Christmas in a Greenhouse (*Inquirer*).—Retarded Chrysanthemums and such plants as Salvia fulgens, Scarlet Geraniums of different colours, kept rather dry, Chinese Primroses, Neapolitan and other Violets, and bulbs potted directly, forced in a frame when the pot is full of roots, and also Camellias with forward buds will bloom in such a house; and Epacris, Cytisus, and many other things could be brought in, if more heat was used.

Vines in Pots (*Argus*).—We are complimented by you thinking that we "have set at rest the question—What is growing Grapes in pots?" The subject need not be discussed further, and we must say that Mr. Bennett, like others before him, was quite entitled to plead that he acted up to the words of the Society's rule. As we said last week, the rule should be more unmistakeably worded. In saying this, we do not differ from the Judges' decision. They decided quite correctly.

Cerastium tomentosum as an Edging (*E. C.*).—Last week, and the week previously, we gave directions for its propagation. It is quite hardy, and only requires to be propagated every spring, planting the divided pieces where the edging is to be.

Names of Insects (*F. A.*).—The maggots which infest the Mangold Wurtzel leaves, feeding upon the parenchyma or inner substance of the leaves, are the young of a fly scarcely distinguishable from the common house fly. They go into the ground to undergo their transformations. Those in the Spinach leaves are the larvæ of a closely allied species. Hand-picking is the only remedy.—W.

Diseases in Fir Trees (*A Constant Reader*).—The young shoots are infested with the common Hylurgus piniperda, a Beetle allied to the family of the Weevils. The shoots should be picked off as soon as they show the least sign of being injured, and immediately burnt.—W.

Asphalte (*N. R.*).—It would do very well for flooring a greenhouse. It is made of lime rubbish two parts, and coal ashes one part, both very dry and sifted fine. In a dry place and during dry weather, mix it with boiling-hot coal tar into a mass as thick as mortar, put it 3 inches thick to form the floor; sprinkle over it coarse, dry sand, and when cold pass a light roller over it.

Superphosphate of Lime—Sulphate of Ammonia (*W. Adams*).—About 5 cwt. of the first and 2 cwt. of the second per acre, is an average quantity to apply to your light land grass. Apply them in the spring. We should sow them broadcast over the surface during wet weather. Apply to the artificial manure companies for other information.

Orchard-house (*M.*).—The eastern aspect will do, as we presume the south end would be also exposed to the sun. There is no paper devoted to market gardening. We gave up publishing the market prices as we found that they only misled. The retail prices afford no criterion whereby a seller can calculate what he would realise.

Lilium giganteum not Flowering (*Kate*).—If kept dryish all the winter, the Lilium in your greenhouse may do well enough next spring; but all things considered, unless this can be done, we would repot it carefully, and keep it in a cool place free from frost, patting the earth in firmly, and just seeing that the roots did not suffer from dryness. When it commenced growing next season, we would set the plant on moss kept moist, or in a saucer, with half an inch of water in [illegible] in preference to watering much on the surface until growing freely.

Excluding Wasps from Grapes (*A Constant Subscriber*).—The [illegible]

out from the bunch, and allow light and air to get to the berries. It must be tied tight at the stalk. If it will not go quite close, stick in some cotton wadding with the woolly part out. We have also used bags of fine silk paper, but that is not equal to the muslin. A daring fellow will make a way for himself, and then myriads will follow. The wasps are getting thin now. If you could drive them all out of the house, you might cover the ventilators with gauze.

Vines and Flowers (*S. L., Clarendon Villa*).—Prune your Vines as you propose, at the end of this month. Cut them back to 1 foot or 15 inches from the bottom of rafter. The seeming sacrifice will pay you good interest afterwards. In winter you may have bulbs, elsewhere forced, brought into the vinery. Epacris, Camellias, Coronillas, Primroses, Violets, and Cinerarias, &c., without any forcing, in bloom most of the winter with a temperature never about 45° with fire heat. If you go above that you will start your Vines prematurely. With the exception of Scarlet Geraniums, hardly any bedding plants are worth taking up, as young plants will thrive better and take less room. Geraniums may be potted and kept growing in a cool, shady place. To merely keep old Scarlets take them up, shorten them, remove every leaf, and pack them closely together in pots or boxes. Keep your bedding plants in the coldest end of the house. Suppose you take up a Calceolaria or a Verbena, you would need a four-inch or five-inch pot, and you might have a score of young ones in that space.

Name of Fruit (*Fairfield*).—Your Apple is the summer Golden Pippin.

Names of Plants (*W. Smith*).—1, Polypodium vulgare; 2, Pteris longifolia; 3, Polypodium dryopteris; 4, Blechnum occidentale, var. minor. (*Fanny*).—Adiantum formosum.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

JUDGING POULTRY.

As a constant reader of your useful paper, I have been much interested in the published opinions on the subject of judging, which have appeared from time to time; and, especially so in your remarks in last week's Number on the suggestions of "T. B." for the establishment of a new system of awarding the prizes at exhibitions. You have gone so fully into the subject that there is but little left for myself or any one else to comment upon; but I trouble you with a few lines as you express the hope "that opinions may be elicited from your readers." From my experience of twenty years as a breeder and exhibitor, and latterly as judge, I do not believe it possible to carry out into practice the suggestions of "T. B.;" the expense attending the engagement of "a number" of poultry amateurs would be an objection *in limine*. Every one knows how difficult it is to make both ends meet in the accounts of poultry exhibitions; and if committees are to undertake the "out of pocket" expenses of "a number" of gentlemen from various parts of the country, and pay the usual Judges as well to act as arbitrators, I fear they will need in the first instance materially to increase their subscription list to enable them to meet this extra expense: and further, I very much doubt whether our best Judges would like to be tied down to a selection of pens from amongst those marked by these amateur gentlemen. Their experience and their judgment are necessarily so much more extended and perfect than can be the case with exhibitors who never act as judges, that I am persuaded, if a poll could be taken, at least nine exhibitors out of ten would vote for the engagement of two or three of the best judges who could be obtained, rather than adopt the intricate and expensive plan suggested by your correspondent. I entirely agree with you that as a rule "poultry shows are well and honourably conducted;" and that the exceptions are so rare (if exceptions there be), as should lead exhibitors to pause and reflect whether the mistake may not arise in their own opinions rather than be traceable to unfairness on the part of the Judges.

I do not like to trespass upon your space further, as doubtless others may have something to say; so I will conclude by remarking that it is in the interest of all parties that correct decisions should be arrived at in awarding the prizes, and my firm conviction that none but those who have had large experience as breeders and exhibitors of every variety are competent to award the prizes satisfactorily. The character and reputation of the Judges, the credit of the Committee, and the satisfaction of the exhibitors, alike combine their influence towards a right decision; and I believe in the great majority of instances this right decision is arrived at.—C. Ballance, *Taunton*.

If readers judged from some of the effusions which appear occasionally in the columns of The Journal of Horticulture and elsewhere, they would most certainly imagine that the office of judgeship of poultry shows is both lucrative and agreeable. The former it decidedly is not, and the latter but seldom; [illegible] but few shows pass off at which there is not some disappointed [illegible] exhibitor [illegible] ready to attribute his want of success to the ignorance or dishonesty of the unfortunate judge than to any fault of his birds or his own want of judgment in matching them. He therefore, in the first place, bursts forth into a torrent of rage; but fortunately he has not the power to vent it personally on the Judge, as he has left the show-room and leaves the town by next train. He therefore resolves to write, and does, and such a letter!—one which would not convey a favourable impression either of his conduct or temper. And why is this? Simply because this gentleman, who is an acknowledged good judge, was of opinion that one exhibitor's birds were better than another, and therefore with all honourable intentions awards the prize accordingly; and for this he is to be abused worse than any swell-mobsman! This is one of the pleasures of poultry judging. Another is having to travel perhaps two or three hundred miles to and from the show, work hard for a whole day, and afterwards perhaps not to get his expenses paid. How much better would it have been for this impatient exhibitor if he had written to the Judge in a gentlemanly and courteous manner, asked an explanation of his awards, which he no doubt would willingly have given him. He would then, probably, have been able to improve his pen, and the next show be a successful instead of a disappointed exhibitor.

I mention these particulars merely to show that it is a mistaken notion to suppose that poultry judging is such a sinecure as some seem to imagine.

I am induced to intrude myself upon your columns, having seen a letter in your paper of last week signed "T. B.," containing a proposition next to impossible to be adopted, and which if adopted would, I believe, be most unsatisfactory and inconvenient, and I do not think he need hope for one minute that it will ever be adopted.

As at the present time I am an exhibitor of poultry, also am connected with a poultry show, and am occasionally a Judge of poultry, I have had ample opportunities of observing the absurdities which appear in the shape of complaints made by exhibitors against awards. I well remember once judging a class of Game cocks; and after the awards were made and the show opened, the owner of one of the birds came to me in a most courteous manner, and calling my attention to his bird, remarked that "he thought he would have won." I then told him that he had a crooked breast, which on handling he found to be correct, and was perfectly satisfied. I mention this incident to prove, first that exhibitors are liable to make mistakes as well as Judges; and next, how much better it is for disappointed exhibitors to go to Judges, as this gentleman came to me, and ask explanation, which no doubt will be willingly given them, than to pour forth torrents of abuse upon the poor Judge, the Secretary, Committee, and poultry shows generally—and it is but seldom but that they could have an explanation of their want of success, which would amply satisfy them that the Judge was right and they were wrong. They would not lose their character as gentlemen, the Judge would not be abused as a rogue; and they, knowing the faults of their birds which shut them out of the prize list, would probably be able to remedy them by changing the birds, and, as I before said, at the next show be a successful instead of a disappointed exhibitor.

As to the query as to one judge or more, I am of opinion, after consideration and some experience, that one is best, provided that one is to be depended upon as a first-rate judge of all classes—and there are several who may be; but I think the question which has been often discussed is still open to argument, as there are *pros* and *cons* on each side. "T. B." had better get up a show, and not have the labels numbered, and see the trouble and inconvenience it would put him to. He also says, he has no doubt you will have plenty of replies, and not much variation. I think he may be right in this first-named particular, and possibly in his latter, as I shall be much surprised if all do not condemn his proposition, as well as his anonymous attack upon the judges. As I make no attack upon any one, but wish to see all have their due, I think I am justified in not publishing my name, but simply sign myself—JUSTITIA.

BEDFORDSHIRE POULTRY SHOW.

THIS Show was held in connection with the agricultural meeting for the first time on Friday last. It was but small, but there was plenty of encouragement to persevere, and there was the proof that the nucleus exists for a much larger one. Poultry has been so long neglected in agricultural districts, that it is seldom those who have the management of these meetings know anything of the subject, and zeal is a sorry substitute for knowledge or experience. The former believes it has foreseen and remedied everything; but the latter soon teaches the valuable lesson by upsetting all theory. It is, however, astonishing how much may be learned by managing one show, and we look for large competition next year at this Meeting. We are, however, bound to state it will be from gentry, townsmen, and professional men. The agriculturists will not attend to poultry; and were it not for the love of it that is born with some people, and which causes them to try experiments and to interest themselves in every phase of the question, we should be gradually giving up the supply of our own tables with part of its most delicious food. It is quite true that the poultry shows in connection with agricultural meetings increase in number, but it is not less so that few of the entries come from the class especially interested in these meetings; and although the poultry is the most-crowded part of the Show, yet it is frequented principally by the gentry and the townspeople.

This Show lasts but a few hours. It opens to the public at eleven, and is over by four o'clock. Every exhibitor is bound to provide the baskets in which his poultry is shown, and they are made according to pattern. While this insures the uniformity which is absolutely necessary, it deters some exhibitors, because they think the basket will be afterwards useless. If these shows become general, we doubt not some one will be found to provide, and let them on hire. A large lofty shed capitally placed, and commanding a view of the whole of the Show, was selected for the poultry, which were ranged around about 3 feet from the ground.

The *Dorkings* contributed nearly half the Show, and were excellent in quality. If proof were needed of our assertion, we would only say the Rev. F. Thursby took first prize for adults, and first and second for chickens. It was quite refreshing to see some good rose-combed chickens shown; they deservedly had the third prize. There were excellent White Dorkings.

The *Cochin-Chinas* were not good in quality. It seems a pity to keep birds that are neither commendable at a show nor saleable at a market, for want of merit, when such consume quite as much food as would serve an equal number of fowls of better quality, and, consequently, twice as valuable.

There were some good *Hamburghs*; but as we suppose some of those who exhibited may look for a record of their exploits in our columns, and as we are bound to notice anything that may be of use to them hereafter, we mention the little care that was taken in the selection of some of the pens; crooked backs and faulty plumage were there. The colours of these birds should not run into an indistinct and mossy shade, but the pencilling should be distinct. The various breeds brought Brahma Pootras, Polands, Sebright, Game, and Black Bantams. We hope to see a class for Brahma Pootras at every agricultural meeting where interest is taken in poultry. We are satisfied they are among our most valuable fowls; and if these meetings are to carry out their professions of being schools, trials, and lectures, then small entries at first must not discourage, but if it is believed that which is proposed will eventually be a benefit, the motto must be "Persevere."

Before we conclude we must mention very favourably Mrs. Ames' Dorkings; also those belonging to the Rev. J. G. A. Baker, and the Rev. F. Thursby's Spanish.

Mrs. Ames' Aylesbury and Mr. Thursby's Buenos Ayrean *Ducks* were perfect. The *Turkeys* and *Geese* were very good, and Mr. Leno's *Bantams* would have graced any show in England.

Mr. Baily was the Judge.

PARALYSED GAME PULLETS.

I HAVE several of my Game pullets drop down on their knees. They are four months old. Is there any remedy? They look well about head and eye, but are quite paralysed in the feet; they have a good run (14 acres), and a change of diet constantly. —F. BAILY.

[Your Game hens are suffering from weakness or cramp induced by improper flooring of their roosting-place, or from overgrowth. If the flooring be bricks, stone, or wood, that will be the cause; if, however, it is of earth or gravel, as it should be, then it will be weakness that must be met and remedied by good and regular feeding. The reason of their dropping on their knees is, their legs are too weak to support their bodies. Feed them well on ground oats, mixed with milk, three or four times per day, each time as much as they will eat, but no more. They must not have food always by them. It is likely if they have grown fast, they will now gain strength, and the resting on their knees is only to be viewed in the same light as the strange positions of a lanky, overgrown boy, who looks and feels as if he would fall to pieces.]

ROUP IN PIGEONS.

I HAVE a valuable large white Trumpeter cock seized with this disease. The scale has been removed from his tongue, his tail cut a little to induce bleeding, and butter administered to act as a purgative. Is there anything more effectual I could try? Is this disease infectious? if so, should I confine the bird by himself, the cot being a large room in the loft of an outhouse?—A SUBSCRIBER.

[Keep the Pigeon clean, and free from damp or cold winds; give a little sulphate of iron in the water, or smiths' forge-water to drink. Let him have such condiments as grit and broken oystershells, and, if convenient, let him fly out. Good wholesome food, fresh air, and the bath will often cure the roup in Pigeons.—B. P. B.]

CANARY ASTHMATIC.

I HAVE a Canary which has entirely lost his voice ever since he moulted, twelve months ago; he has been ailing ever since, and has lately become much worse. He eats all day long, and sits panting, with his feathers all ruffled. He has been in this state for several weeks. Can you tell what is the matter with him, or suggest any remedy?—INQUIRER.

[Your Canary is suffering from asthma: most likely he caught cold during his last moult. If the disease has so far advanced as to seriously affect the lungs I fear there is no cure. In the earlier stages I have found the following treatment of much benefit:—Avoid all heating and pungent seeds, as rape; give bread and milk about a thimbleful fresh every day, and plenty of green meat, as chickweed, groundsel, and lettuce; put some Stockholm tar in his water, and keep him out of the draught.—B. P. BRENT.]

THE CANARY AND THE BRITISH FINCHES.

(*Concluded from page 430.*)

6.—THE ORTOLAN (*Emberiza hortulana*).

German, Der Gartenammer. *French*, Ortolan.

THE Ortolan cannot be considered as an English bird; but as great numbers are imported into this country to satisfy the cravings of the epicure, a short notice of the bird may not be out of place in these papers.

It is believed that the fashion of eating Ortolans in this country became more common during the French Revolution on account of such dainties being then prohibited in Paris. The few individuals of this species that have been captured in this country are not unlikely escaped birds that have been imported, still, as they are said to migrate as far north in summer as Sweden, it seems strange that they are not more common in England.

The following description I have endeavoured to translate from Bechstein's "Natural History of the Birds of Germany," to which excellent work I have been much indebted in the study of seed birds.

"The Ortolan is nearly as large as the Yellowhammer, though stouter in breast and beak, which latter is not so much flattened at the sides, and yellowish flesh-coloured; the irides of the eye dark brown, the eyelids are edged with deep yellow; the feet flesh-coloured, and the nails brown; the head and neck are greyish-olive; the throat and a stripe from the corner of the beak running down the neck yellow; the back and shoulders red brown, spotted with black; the rump dingy greyish-brown; the breast, belly, and vent-feathers reddish-yellow, shaded with light brown, and lighter towards the rump; the wings blackish, the primary-feathers outwardly grey, the secondaries and the covert-feathers broadly edged with red brown, so that the closed wing appears reddish brown spotted with black; the tail-feathers [illegible] wedge-shaped white spot on the inner side reaching to the middle, the remainder bordered with reddish-yellow.

"The hen is rather smaller. On her head and neck the ash-grey colour more predominates, with small, oblong, black specks along the shafts of the feathers, and her breast is less brown.

"The young have previous to the first moult an undefined yellow throat, mixed with grey; their breasts and bellies are reddish-yellow, speckled with grey."

Further, "the Ortolan is a restless bird, to which day and night are the same, and it calls and sings at either time. The song has much resemblance to the Yellowhammer's, except that the voice is fuller and clearer, and also the last tone falls deeper instead of rising as in that bird."

He gives the song as *Gob, gob! peck, peck, peck, peck,* [illegible] *tzwit, tzwit! gye, gye!*

The Ortolan is a bird of passage.

To prepare them for the gourmand they are placed in a lighted room, and well fed on oats, hempseed, and bread and milk. In a short time they become so fat as to weigh 3 ozs. They must then be killed, or they would die of fatness. They are then considered a *bon bouche*.

All the different species of Buntings are equally good to eat, and if treated in the same manner would become equally fat.—B. P. BRENT.

AGE OF BEES.

THEY say bees live only six months. Last July I added to two swarms, or rather stock, Ligurian queens. One has swarmed thrice, the other twice, and now to-day there are a very large quantity of the English bees that must be more than twelve months old. Besides which, some of these bees have been twice fumigated, and they say bees do not live the winter after fumigation; but I think when properly done it does not seem to affect them—indeed, if I may judge of two wasps' nests that I fumigated with puff-ball nitre and sulphur, and closed them up, they seem to be more lively after it, as they were hard at work next morning, and had made two fresh holes out. Driving bees, no doubt, is a better way when you want to take the queen away; but, then, bees will not always drive, and it is not any one that is clever enough to do this, and find the queen; or, like M. Hermann, make the bees pass in review, and I wish any one would inform your readers how he does it: and, consequently, the only other way I know is to fumigate.

18th September (South Durham).—I, yesterday, saw drones going into two of my hives. One I have had at the moors, the other I have had to feed. I could hardly believe my eyes, and having my net in hand caught one, and so saw that I was right. One of my old Ligurian stocks from throwing off two good swarms has left herself weak in bees, and as it is a large hive, 20 inches square, I must add some more bees to it. Would you kindly say if I were to take the queen away from a this-year's swarm, and then put the hive and bees on the top, there would be any chance of the Ligurian queen and bees going up into the hive, so that in the cold weather I should be able to take away the bottom hive, as I fancy a small hive swarms sooner than a large one, and I wish to increase my Ligurians? Would you also say if moist brown sugar answers for feeding bees? The poor people round here use it, as they cannot afford to buy the lump at 5½d. and 6*d.*; but I fancy unless it is good, and a light colour it does not answer well.—A. W.

[It is certain that working bees do not live much above six months. The common bees which you find in your Ligurian stocks and swarms have either strayed from other stocks or have been bred by the Ligurian queens. A little practice is all that is necessary to enable you to drive bees with ease and certainty. When this has been effected the cluster may be readily knocked out upon a cloth, and the bees passed in review as described by M. Hermann. The existence of drones at this season would lead to the suspicion that the hives in which they are found are either queenless or have drone-breeding queens. No time should be lost in ascertaining how far these suspicions are correct. If you place one hive upon another after removing the queen of the upper one, the bees (after probably more or less fighting, in which we have known the only remaining queen to be sacrificed) will unite, and ultimately descend into the lower hive, [illegible] hatching out any brood there may happen to be in the other. Bees will sometimes do well on syrup formed of brown sugar, but lump sugar is decidedly better, and the difference in price inconsiderable.

BEES AT WOLVERHAMPTON IN 1861.

It is interesting to observe the different reports received from various parts of the country, relative to the success of apiaries in different localities.

A correspondent living about seven miles north of London tells me that the season there was uninterruptedly favourable till near the end of August, and that swarms hived quite in the latter end of June (the 25th) weighed upwards of 43 lbs., exclusive of the hive.

Here bees have fared worse than what they did last year, when early swarms (both first and second) which had time to lay in a sufficient stock of provisions to carry them on through June, were enabled to amass a considerable quantity of honey in July.

I weighed an old hive, and a first and second swarm in August 1860, with the following results:—Old hive 25 lbs.; first swarm, 40 lbs.; second swarm, 33 lbs.; exclusive of the hives. But I find on inquiry this season that a great number of swarms have died of starvation since the commencement of August, and I have found it requisite to feed my own bees (no honey has been taken from any of them), comprising two stocks and two swarms (one of the latter a very populous hive of Ligurians which I obtained from Exeter in the beginning of July) very liberally. They have already had 40 lbs. of lump sugar dissolved in 20 lbs. of water and boiled for a few minutes, and are still scarcely up to weight, and I expect the mortality this winter will far exceed that of last.

I administered the syrup in bottle-feeders made according to my own directions, with very short necks and wide mouths like glass ink-stands, containing 4½ lbs. of syrup when filled. The neck is 1½ inch wide inside, and not more than half an inch long, so that when inverted over the circular hole in the top of the hive, there is still plenty of room for the bees to pass freely over the comb-bars underneath, whilst the square shoulder of the feeder resting flat on the crown-board closes the circular aperture against all intruders. If a piece of perforated zinc is put over the bunghole a short time before applying the feeder, the free admission of cold air will induce the bees to retire from the aperture, and allow the feeder to be inverted over them without risk of annoyance to the operator, or danger of crushing the bees. A puff or two of tobacco smoke will make them retire at once, if the delay involved in the first method is objected to. Tiffany, such as is employed for protecting fruit trees, tied tightly over the mouth of the feeder seems to answer very well, and the same piece may be employed several times; but muslin is generally soon eaten into holes when the feeder has been emptied. The 4½ lbs. are generally taken in a little over twenty-four hours.—J. E. B.

DRONE INFLUENCE,

TO WHAT DISTANCE DOES IT EXTEND?

Some time last year "A Renfrewshire Bee-keeper" inquired as to the probable effect of Ligurian drone influence upon neighbouring apiaries. Whilst replying that this influence must at all events prove beneficial, by introducing new and superior blood into any apiary which might be affected by it, I had no idea that it would make itself felt, except in cases where bees were kept by tolerably near neighbours. A circumstance has, however, recently come under my observation which proves that the flight of either queens or drones must extend much farther than is generally imagined, and that drone influence may extend over a greater area than I had previously deemed possible.

About the second week in August I drove a stock of condemned bees, which was fully two miles distant from my own apiary. During the operation I was much surprised at finding a portion of them distinctly marked Ligurians. Although the bees which bore the distinctive mark were in a decided minority (probably not more than one-tenth) as compared with the common inhabitants of the hive, they were sufficiently numerous to negative the idea which first occurred to me—that they might possibly be the remains of a band of foragers from my own apiary which had thrown off their allegiance to their sovereign, and had cast in their fortunes with a native colony. The next hypothesis was that the queen (which was a young one, the stock having thrown two swarms during the summer) might have been impregnated by one of my Ligurian drones, which would, of course, at once explain the whole affair; but looking at the distance which separated the two apiaries, and having regard to the fact that there were probably some thousands of drones in the four or five colonies which formed the apiary at the time the last swarm issued, of which some hundreds still survived in two adjoining stocks, this hypothesis appeared almost as improbable as the one which had first occurred to me. Being extremely unwilling to leave this mystery unsolved, I took especial care of the queen, and presented her with a few workers to my friend Mr. Fox, who succeeded in placing her at the head of one of his stocks. On the 16th ult., I received a note from him, in which he tells me that Ligurians have made their appearance in the hive to which he had introduced her. This appears to settle the point, and proves beyond question that drone influence may make itself felt at a distance of fully two miles.—A Devonshire Bee-keeper.

AGE OF THE QUEEN BEE.

Every apiarian should know, as far as is practicable at least, the age of every queen in his apiary.

Those who depend upon natural swarming may save themselves much trouble, and frequently the loss of a swarm, by knowing the age of their queens; or, from which stock to expect a queen that will not fly, which she seldom fails to do, except when enfeebled by age.

When a swarm issues, if the queen is too old to fly, she drops to the ground, and, if not picked up and put with the swarm, is usually lost, and the swarm returns to the hive, and must wait the same length of time that would be requisite to bring out a second swarm; and sometimes will not come out at all.

If the apiarian does not expect a feeble queen, the swarm will generally return to the old hive before he is aware that she cannot fly. Then his only alternative is, if he finds her, to return her to the hive, and she will generally come out again the next day, if the weather is fair.

The queen will fly until she is four years old. At four she is too much enfeebled, and will generally, perhaps always, fail to fly, though her wings may appear to be whole. There may be instances when a queen will fail to fly from some other cause; but such very seldom occurs in natural swarming. The old queen is sometimes destroyed and a young one substituted. In such a case the queen might fly when she is supposed to be too old to do so. When such an instance occurs, I call her one-year-old, presuming that the old queen has been changed off the preceding year.

I will give my method of knowing the age of the queen.

An old stock that cast a swarm last year, or an after-swarm last year, will have a queen one-year old.

I mark my hives thus: if a first swarm, on the 15th day of June,—

1st. June 15th, 1861—1. If an after-swarm, thus: 2nd, June 15th, 1861.

The first figure 1 denotes a first swarm, then the date, the last figure denotes the age of the queen.

A figure 2 denotes a second swarm, of course a young queen.

The hive from which this swarm came, I mark thus:—

1, June 15th, 1861, in another or different place on the hive, so that I can readily distinguish this from the mark at hiving.

By referring to this simple record on my hive, I am not at a loss to know when to expect a queen that will not fly.—C. Coe, *Union Springs, N.Y.*—(*American Bee Journal.*)

[The foregoing suggestions are of value. The age of queens is, without doubt, a very important point in bee-keeping, and should be noted wherever practicable. Independent of this, there is a very great variation in the breeding powers of different queen bees, and every endeavour should therefore be made to furnish stocks with queens of the greatest degree of fecundity. It is in this respect that I have found Ligurian queens excel all others.—A Devonshire Bee-keeper.]

APIARIAN NOTES.

In answer to your excellent correspondent, "A Devonshire Bee-keeper," I have grave doubts that a virgin queen lays drone eggs. From analogy take the wild bees, or humble bees as they are vulgarly called. The queen mother of all the genus of Bombi, at least to the number of fifteen species—all social bees, which live in more or less numbers in communities—the queen mother of the whole of these is impregnated between the middle of July and the end of August, in England, and she remains in a dormant state in the earth after impregnation until the following March or April. She commences nidification generally from the beginning or middle of April to the end of May. In most seasons the first workers appear about twenty-five days after the comb is made, generally only one or two at first. Towards the last week in June, and sometimes a fortnight later, the males appear, and immediately after the young females, which are the founders of the colonies of the following year. These latter are impregnated by the drones, and only one impregnation ever takes place, the effects of which last until the whole of the bees are hatched in the succeeding summer. The workers and males of all these species perish before winter commences.

As the "DEVONSHIRE BEE-KEEPER" is one of the new school, I strongly recommend him to get a bee-book published by the ingenious Mr. Huish about fifty years ago, in which that gentleman throws overboard all the theory of the immortal Huber by a stroke of his pen. Mr. Huish insists that there is no connection between the queen mother and the drone, "that the aura" of the drone fecundates the eggs, but that the queen has the power of laying all the eggs both of drones and workers, and, of course, queens (which in precedence I ought to have mentioned first). He then, I am sorry to say (*de mortuis nil nisi verum*), enters into a long tirade against poor Mr. Huber for many pages, condemning the whole of his work as an imposition on the gullability of the public. Mr. Huish's work is a very comprehensive one, and, I think, contains more matter of one sort and another than almost any of the sort extant.

Should a hive lose its queen and no confusion take place in consequence, depend upon it there is another young queen in embryo, or one ready to take her place. This must have been the case in the account given by the "DEVONSHIRE BEE-KEEPER" in a late Number of THE JOURNAL OF HORTICULTURE.

Water ought to be given to bees from the middle of March until the end of the swarming season, as they require water only during the great breeding season. I have found the easiest method is to use a moderate stone trough filled with pebbles to the brim, or pieces of wood floating at the top of the water. The wood should cover nearly the whole surface. I have noticed frequently that fresh rain water is preferred to pure spring water, by the eagerness with which the bees settle on the leaves of plants or trees after rain, even near the usual place—the trough intended for them. Where there are nice, gravelly, shallow, running brooks, there is no occasion to offer water.

One of your correspondents is puzzled at Mr. Taylor's description of a good bee country. There is little obscurity in the statement. What Mr. Taylor means is, I think, quite true—that a rather poor country, such as is found in parts of Dorsetshire and Hampshire, where there is abundance of heath, is better adapted for bees than a highly cultivated country without heath, although the land may be let for double the sum or more. Parts of Hampshire near the New Forest will support many more bees than the richest tracts which can be found. There are heath and white clover in abundance, and numerous wild flowers, trees of all sorts, and honeydew, &c.

The honey of the past summer is of excellent quality; I do not remember to have tasted better.

The finest honey I ever met with was in the north of Devon, and it was at the end of a showery summer—1849.

I hope soon to read a favourable report of the Ligurian bees from some correspondent, and detailed particulars as to the quality and quantity of honey taken from some of the most flourishing stocks. From the appearances and the southernly and westerly winds continuing over the equinox, we may expect a mild winter very unlike the last.—H. W. NEWMAN, *Hillside, Cheltenham.*

VARIETIES.

APPLE DUMPLINGS.—In every paper you will see some time or other the query, How can I make light pot-pie? How can I make light apple dumplings? And certainly I had rather go hungry a little while than eat the slices of "specific gravity," I have before now masticated for politeness sake. Some time since I promised to give our way of making apple dumplings which is as follows:—Having pared and thinly sliced the apple, I rub butter in the flour nearly enough for an ordinary pie-crust; mix a little soda in some [illegible] milk to make it foam—any more than this is injurious; now moisten the crust about as soft as ordinary biscuit, roll out and butter it over lightly, then double it over once and repeat. Put in no more apples than the crust will easily lap over on, and two small dumplings are better than one large one, as they are more easily got into a bag, and take less time in cooking. When the fruit is cooked the pastry is done, and the time of cooking must be regulated accordingly. If we cook the fruit before putting it in, half an hour is sufficient to boil an ordinary-sized dumpling made in this way—though in roll-form two hours are necessary. Pudding-bags must be kept sweet and clean, dipped in boiling water and well floured on the inside before using. A good sauce to be eaten with apple dumplings is as follows:—To a pint of boiling water add a good slice of butter, half a nutmeg grated, two table-spoonsful of flour, previously mixed in cold water, and half a tea-spoonful extract of lemon, with a coffee-cup full of white sugar; boil one minute. As far as my experience has gone, heavy apple dumplings are owing to too much cooking, or want of enough shortening, or perhaps a poor fire, and water not boiling to start with.—M. J. STEPHENSON.—(*Prairie Farmer.*)

WHITEWASH.—Whitewash is one of the most valuable articles in the world when properly applied. It prevents not only the decay of wood, but conduces greatly to the healthiness of all buildings, whether of wood or stone. Outbuildings and fences when not painted should be supplied once or twice every year with a good coat of whitewash, which should be prepared in the following way:—Take a clean, water-tight barrel or other suitable cask, and put into it half a bushel of lime. Slake it by pouring water over it boiling hot, and in sufficient quantity to cover it 5 inches deep, and stir it briskly till thoroughly slaked. When the slaking has been effected, dissolve it in water, and add 2 lbs. of sulphate of zinc, and 1 lb. of common salt. These will cause the wash to harden, and prevent its cracking, which gives an unseemly appearance to the work. If desirable, a beautiful cream colour may be communicated to the above wash by adding 3 lbs. of yellow ocre; or a good pearl or lead colour by the addition of lamp, vine, or ivory black. For fawn colour, add 4 lbs. of umber, Turkish or American (the latter is the cheapest), 1 lb. of Indian red and 1 lb. of common lampblack. For a common stone colour, add 4 lbs. of raw umber and 2 lbs. of lampblack. This wash may be applied with a common whitewash-brush, and will be found much superior both in appearance and durability to common whitewash.—(*Chem. Gazette.*)

BUTTERMILK FOR GAPES IN CHICKENS.—A correspondent says, "Feed chickens with plenty of Indian meal made into a dough with sour buttermilk, and they will not be troubled with the gapes."—(*Genesee Farmer.*)

OUR LETTER BOX.

CUT IN A DRAKE'S FOOT (*Poultry Fancier*).—Wash the cut of the drake's foot thoroughly, and be sure you leave no stone or pebble, not the smallest, in it; if you do it will fester. If there is inflammation poultice it; if there is not, tie up in leather, and let the bird walk only on the grass. It will soon be well.

COCHIN-CHINA HEN NOT LAYING (*Cochin*).—No one who wishes for a good supply of eggs keeps a Cochin-China hen after she is one year old. Your hen is three years and a half, and is becoming worthless. You might omit the Indian corn from your poultry diet. Barley, oats, and potatoes would be better.

PATENT CATTLE FOOD (*A Subscriber*).—If you give your cattle the best meal, and the best oil cake, you will fatten them quite as fast, and very much cheaper, as you could with any patent food.

YOUNG MULE BIRDS DYING (*L. B.*).—It is a common occurrence for young birds to die about the moulting time. I think it often arises from feeding them on too heating or exciting food, such as rape and hempseed. It is like pampering the appetite of a child on hot and highly-spiced food and brandy sauce. Plain, nutritious, unstimulating diet will produce a strong, healthy constitution, and enable the birds to moult without difficulty.—B. P. B.

FEEDING BEES—MOISTURE IN BEE-HIVES (*A. W.*).—My bees did quite as well last winter on sugar and water as they could possibly have done on honey. I gave no specific quantity to each hive, but fed until they were heavy enough to stand the winter. I was certainly much annoyed by the presence of internal moisture, but do not believe the quality of the food had any influence upon this evil. I am quite undecided as to the best plan of getting rid of it, but object to ventilation during winter. At present I avoid large windows, and allow only one in each box. I also intend trying unpainted boxes not exceeding seven-eighths of an inch thick, and with efficient external protection. I fully agree with you as to the superiority of Ligurian bees.—A DEVONSHIRE BEE-KEEPER.

SILKWORM'S EGGS (*F. W. Towle*).—These (the common) may be bought at some of the shops in Covent Garden Market. We do not know where those of the Ailanthus silkworm are to be bought. Seeds are best sent to Australia in separate small ca[illegible] bags (no paper) each suspended by [illegible]

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	OCTOBER 15—21, 1861.	WEATHER NEAR LONDON IN 1860. Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
15	Tu	Polymnia uvedalia.	29.768–29.500	54—46	S.W.	·28	26 af 6	6 af 5	51 2	11	14 11	288
16	W	Liatris pumila.	29.668—29.474	50—40	S.W.	·29	28 6	4 5	59 3	12	14 24	289
17	Th	Arbutus unedo.	29.935—29.858	58—37	W.	·01	29 6	1 5	7 5	13	14 36	290
18	F	St. Luke.	29.760—29.492	56—45	S.W.	·18	31 6	IV	rises	○	14 48	291
19	S	Serratula quinquefolia.	29.701—29.491	60—41	S.W.	·01	33 6	57 4	46 a 4	15	14 59	292
20	Sun	21 Sunday after Trinity.	30.008—29.874	58—27	W.	—	35 6	55 4	12 5	16	15 9	293
21	M	Sun's declin. 10° 48′ s.	30.206—30.001	57—31	S.W.	—	36 6	53 4	43 5	17	15 19	294

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 58.7° and 41° respectively. The greatest heat, 76°, occurred on the 14th in 1845; and the lowest cold, 22°, on the 19th in 1843. During the period 130 days were fine, and on 108 rain fell.

VARIEGATION, CROSS-BREEDING, AND MULING OF PLANTS.

It is only recently that my attention was directed to your magazine for animadversions on an article I had written in a contemporary, on the variegation in the leaves of plants; and having now possessed myself of the whole Numbers of your current volume, I have read with interest the very ably written articles of those who have so animadverted on the remarks I made, and also with still higher interest the doctrines of Mr. Beaton on the same subject. However much I lament to stand opposed to so eminent an authority as Mr. Beaton, whose vast experience and great powers of observation entitle his opinions to much respect; yet as he, and he only so far as I can see, maintains the belief and asserts it as doctrine not to be gainsayed that variegation is not disease, I do humbly demur to that assertion, and adhere to the views I adopted—that it is.

I cannot appeal like Mr. Beaton to the experience of forty years, but I can do so to at least half that term, during which time I have made no end of experiments which, if one-tenth of them had succeeded, would have gone far to establish the Lamarckian doctrine so recently revived by Mr. Darwin—that all plants now so diversified had their beginnings in a few original forms. How impressed with this belief I laboured to establish it, by trying to unite races and genera very distantly allied, I would now be ashamed to acknowledge in detail. But of this again.

How stands the question, and how stand opinions for variegation being health or disease?

The opinions of an "Old Showman," which I generally endorsed by my own views, have been animadverted on as I have observed, not controverted by the other writers who give evidence, or offer remarks on the question.

"Nickerbor" (why should men who write so well as "Nickerbor," an "Old Showman," or "G.," not give their names in full?) no doubt sets out holding with deference "that variegation is not disease;" and he cites the case of "the variegated Pelargonium Flower of the Day" not being a seedling, as an "Old Showman" believed, but a sport, or if he will have it so, a diseased branch of a Scarlet Geranium whose history was known, and from which he, "Nickerbor," once raised a batch of seedlings, every one of which "was variegated or diseased from the seed-lobes." This I can perfectly well understand. It is the common case of a diseased parent transmitting its taint to the progeny, of which we have instances every day as well in the animal as in the vegetable world. He next notices my own experiment of seedlings raised between the white-flowered and the scarlet-flowered Geraniums as adverse to my own views, and as tending to show that variegation is not disease. But may not disease be in the root as well as in the branch, in the seed as well as in the leaf? That is what I contend for, and I do think my experiment repeated, be it remembered, and with like results both times, proves it, and Mr. Beaton to this extent confirms the fact, that the disease or affection, for he disputes disease, is in the pollen. My white-flowered Pelargonium was the first of all its race I ever saw or heard of. It was given to me as a white-flowered variety of the common Scarlet Geranium, and I believed it to have been accidentally raised from seed, just as the Venus victrix, or first white-flowered Fuchsia was obtained; no one could tell how. But I do not know, and cannot vouch for its origin. If it was in itself, by whatever law, a departure from its kindred in the flower, might not a like departure be transmitted to the foliage of its progeny? Be this as it may, it certainly originated in the pollen—*i.e.*, in the male, and not in the female parent; for when the cross was inverted, and the white-flowered kind made the seed-bearer, the healthy pollen of Tom Thumb was attested in the unbroken verdure of the seedlings, no malaffection ensuing from the taint or disease (supposing it present) in the seed-bearer. This is a fact, if it be not a law, worthy of being recorded, and I rejoice to be at one with Mr. Beaton upon it. But to proceed.

In this experiment "Nickerbor" can maintain nothing against disease being the cause of variegation. I agree with him the result is remarkable.

I am not to dispute the indelible nature of variegation in some plants, though it is far from permanent in all, and I know of none where it is more fixed than in the Arundo donax, var. versicolor, or common Gardener's Garters, a plant whose variegation, I believe, no cultivation will eradicate. But it will be observed that this is set down by Loudon, I presume correctly, as a sport of 3 feet in height of the true Arundo donax, which he sets down as 10 feet high. Now, if this do not instruct disease in the striped variety, it establishes a great shortcoming in the vigour which characterises the non-variegated original species.

And this brings me to notice the very candid, and I think just comments offered by your other correspondent "G," who, though following suit to "Nickerbor," frankly admits "one thing which may go far to support Mr. Anderson's views, and that is—that variegation is, I believe, invariably accompanied with a considerable diminution in vigour of growth." I do hold with "G." that this fact is invariable. Let any one look at a variegated plant, and compare it with its non-variegated congener, or with the leaves of a stray shoot (which may often be found on a variegated plant) having leaves of unvaried green, and compare their separate aspects, he will find the green tree or shoot possessed of a vigour and full development of leaf which are not in the variegated one. On going round our Botanic Garden here lately, with Mr. McNab, the curator, I observed a striking instance of this in a variegated Oak, a tree of some 10 feet or

12 feet high, and well spread on the top, no great dimensions for an Oak certainly, the leaves of which were all less or more attenuated, and as if nipped round the edges, the true outline being deficient in all of them. But amid the variegation, there arose a shoot or two of deep verdure, and here the leaves were entire, and about twice the size of the variegated ones. The case is common over all or most variegated plants, insomuch so, that but for the high authority arrayed against my views, or the views which I endorsed, I would have left the question to its fate, or its own solution.

But I must cite the testimony of no less a witness than Mr. Beaton himself to support my views. He tells us (page 312) what Mr. Standish has done, and can do among Rhododendrons in this way, that he can cross these, great and small, "down or up to the verge of variegation, and until there is not a particle of colour in the leaves, and no art of man can grow the seedlings; yet every one of them is in perfect health, according to its own degree of existence." Now this is just what I contend for. If Mr. Standish cannot get these blanched shoots to grow, it is just what I learned from his own lips not long since when he visited me here, and what my own experience taught me more than ten years ago, when I got some shoots entirely blanched among the variegated batch of crossed seedling Pelargoniums referred to, which, as they made no progress on the plant, I tried, but tried in vain, to strike as cuttings. Truly this looks very like disease. It is a pure albino, whose unhappy state in the human family, few, I presume, regard as anything but as diseased.

But I will not fall out with Mr. Beaton, "NICKERBOR," or "G." about names. We are all at one as to the main thing—that if it is not disease it is an affection of the plant entailing impaired vigour, and, I hold, diminished growth, whose true cause, whether originating in the seed or occurring in the branch, it is alike desirable to have ascertained; for there is at present a rage for these variegated things, and if the laws which produce or affect them can be clearly shown, then it will be profitable to some and instructive to all to know them.

I had gone on thus far when your new Part for August reached me, and there I found a much higher and more reliable evidence given to the same effect with my own in the excellent article by Dr. Morren, whose very searching investigations must settle the question thus far—that variegation is disease; for, after going over M. Sageret's conclusions, some of which may be exceptionable, he sums up by observing, "After this exposition of facts variegation may be regarded as a malady." The various causes assigned by M. Sageret—such as the seed being too old, imperfectly ripe, or defective in conformation, or that impregnation was imperfect by immature pollen, &c.—all necessarily infer that variegation is the result of disease, or imperfection of some sort in the seed, where it originates in the seedling. This very scientific paper must be held to close all further debate; yet the causes which produce such results are still a mystery, whose solution the practical physiologist has still to make out, the way to which certainly has been made less difficult by the facts and experiments communicated in the papers referred to.

I had intended, ere I concluded this paper, to have gone a little into the subject of all-engrossing interest of hybridising and cross-breeding of plants, upon which Mr. Beaton in his recent papers has thrown much light and communicated many facts known to few if any before. But though I cannot now go into the subject, I may take it up at a future time, and state some results of my own manifold experiences in this way; by many of which I will corroborate Mr. Beaton, though, on the whole, what I have made out warrant me in expecting much stranger things to be accomplished "than have been dreamt of in his philosophy." Few take into account the possibility of doing at one time what they have failed to do at another, and so abandon in disgust experiments which may have oft before led only to disappointment. The patient experimentalist must wait weeks and months for a favourable time. In my article in Mr. M'Intosh's "Book of the Garden,"* I insisted upon this being studiously watched for and improved. All my subsequent experience confirms me more and more in that view. Few such days as I considered fit for hybridising (not merely crossing), [illegible] this bygone summer, and scarcely any in the summer [illegible] things all but given up as hopeless I would resume on an auspicious day (which in this climate are truly like angels' visits)—a day not of strong but of subdued sunlight, with a sky so charged with electricity as to give a buoyancy to the spirits and elasticity to the limbs—a day when man, and bird, and beast are in their most joyous mood—seize such a day and shun "the short anthers;" and Darwin himself might yet take heart of grace and do something to sustain his own doctrines. These doctrines I long clung to, and gave up only after hundreds of failures. But I gave expression to one view in the paper above referred to—in the "Book of the Garden," vol. ii., page 320, which I think has not been fully if at all regarded by Mr. Darwin or any other naturalist bearing closely on the subject of these inquiries—namely, the gaps, some greater and some smaller, which occur between various orders of plants. May there not have been, ere this globe suffered from so many disruptions, an affinity between plant and plant, which, by the losses these convulsions occasioned, is now also broken up and so creating these gulfs between which have given rise to races, genera, and species of all the various dissimilar forms we see around us? May there not, too, have been, *in* the early stages of this world's history, a very different state of atmospheric properties from what now obtains more favourable to the ends in question?*

Having already trespassed on your space so far, I must now draw to a close. Ere I do so, however, I must congratulate and compliment Mr. Beaton on his discovery about the "short anthers." At page 312 of your last volume he observes, "In the great bulk of Scarlet and Horseshoe Geraniums there are but seven stamens, four long ones, one of medium length, but which is often wanting, and two almost sessile like the anthers of Wheat—that is, very short indeed, and opening at the bottom face to face. These two are they which reduce a whole family to beggary—first to dwarfs or Tom Thumbs, or, better still, to Minimums," &c. I cannot express how much I was taken by surprise by this remarkable enunciation; for I had from time to time, for ten years past or more, been drawn to consider the purposes of these short stamens in the races of the Rhododendron, and wrought with them till I produced the very results Mr. Beaton has observed.

The Rhododendron Edgworthi had no sooner delighted cultivators with its lovely, large, sweet-scented flowers, than the desire became general to transfer its rare properties into a dwarfer progeny. And many, unhappily, for this purpose began their operations by attempting crosses on this species. The results were a disappointment; for where seeds were produced the progeny were found, I believe in some cases only after many years, to be pure Edgworthi, native pollen having, perhaps, by means of insects superseded the foreign application. I fortunately started on the proper track, and made the crosses with its pollen on the other species. But it may be proper and interesting in passing here to mention, that though I have often subsequently tried to make the cross upon Edgworthi, I never succeeded in getting seeds from any cross so attempted upon that most untractable species.

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* [illegible] n the "Book of the Garden," pp. 319, 320. [illegible] practical portion [illegible] been honoured with a plac[illegible] [illegible]

* I took this view in the article referred to ("Book of the Garden," vol. ii., page 319). Nature, as conjectured by Linnæus, was occupied by but a few original types of the innumerable vegetable forms which have been transmitted to us. How these few first types, if that great authority was right in that belief, have become varied and multiplied from classes to tribes, from tribes to genera, and from genera to species and endless varieties, belongs to those mysteries of Divine agency which set all inquiry at nought, and upon which it were equally unprofitable and presumptuous at the present time to speculate. For who, entreating of such a science, dare invade a field where the Omnipotent evoked no aid from man, ere yet, indeed, man was—while the sun, and skiey influences, and the whole host of insect races now extinct, were perhaps but parts of the agencies and instrumentalities by which

"With herbs, and plants, and fruitful trees,
The new-formed globe He crowned,"

and made it fit for man's use and habitation? Who can speculate now on these, or those atmospheric properties, instinct with life, under whose influence man grew and increased in strength till the span of man's existence extended to near a thousand years—when there were giants on the earth—

"When man was in stature as towers in our time,
The firstborn of Nature, and, like her, sublime,"

[illegible] and a life-sustaining Spirit breathed the will and effected the purposes of the Creator? Perhaps a larger portion and a more genial form of electricity than now obtains may have imparted a principle of higher vitality to the air, and through that medium have communicated a stronger impulse and more enduring energies to both animal and vegetable life. This may or may not have been; certain it is that a change has taken place. Since the Deluge the vital forces have been greatly weakened. Man since then has scarce lived a tithe of his former term; and the vast inhumation of fossil flora bespeak an exuberance and variety of vegetation in temperate zones that have no parallel at the present day even in tropical climes.

I began my operations on another pure species of Dr. Hooker's introduction—viz., R. ciliatum, both being from the Sikkim ranges of the Himalaya, the latter having all the fine dwarf habit, the absence of which is the great fault of Edgworthi, a straggling, ungainly thing. Well, to work I went, and as my great aim was to make the progeny as puny as possible, I purposely used the two short anthers which Mr. Beaton refers to. But I used long as well as short stamens. These crosses, which were effected in the spring of 1855, took, and I sowed the seeds in September and October of that year. There were five separate batches, marked A, B, C, &c. Now, of the taller-growing kinds, I have two plants set with flower-buds. But these were a set of dwarfs, which, with all my care never raised their heads above the pots, and these, so far as they are now living, creep along with small tufts of foliage on the surface of the pots, pretty enough in their way, but without showing the least appearance of bud or blossom. Through the six years of their existence the tallest have got shifted; but I have no doubt they are the pigmy progeny of the short stamens.

Mr. Beaton as the first, perhaps, to find out, and certainly the first so far as I know, to announce this strange discovery, is entitled to its full merit. Its full value has not yet been sufficiently tested. For although I have produced the tiny things in the Rhododendron family which he has done with Pelargonium, inquiry should not stop here. And for my part I did not limit my aim merely to produce by them more dwarfish plants than the parents. Regarding as I did, the pollen of these small anthers as of finer particles than the pollen of the longer and larger ones, I used it as a provision of Nature's own suggesting, in preference to the latter in crossing the smaller species whose pollen-tubes I feared might not admit the grosser globules of these larger anthers. And when the two dwarf stamens failed, I used the smallest and shortest of the remaining stamens. I still cling to the belief that in this way I effected crosses in which with larger anthers I should have failed. I look on them as affording the chance of effecting unions with remote species or genera—as the links, in short, by which large and family groups might be united. These were in the days of my Lamarckian notions; and the recoil consequent on the failure of the fanciful theories I then indulged, discouraged me from pursuing or even recording the results of my experiments with them. I did wrong in this, and fresh trials ought yet to be made; and though these odd pair of tiny stamens are peculiar, perhaps, to the Pelargonia and Rhododendra, yet stamens analogous whose pollen possesses like properties, may be found in other races. The experimenter should go bit by bit, and never despise the day of small things, and if he cannot produce a mule between a Raspberry and a Strawberry, or a Currant and a Gooseberry (I never tried the latter), let him try the muling of more nearly allied things. I do not despair yet of producing a mule between the Blackberry and Raspberry. I made the effort this past summer, but my experiment was marred by an accident. I certainly did try for a mule between the Rubus idæus and the Strawberry, and the latter with Rubus glabratus, an Andean species which I alone possess, from both of which crosses I have young plants, the Strawberry being the seed-bearer in both. Though the seedlings are dissimilar to look at, I cannot vouch as yet for the crosses being true. I have a plant of the former cross, now three years old, which has never yet fruited. The leaves often divide into four instead of three lobes, and the footstalks are much more wiry or shrubby than the Strawberry. Here Myatt's Pine was the seed-bearer. There seems evidently a variation from the female parent, and though, certainly, it is most like the Strawberry, there is little disposition to throw off runners. My other crosses in these tribes being of this summer, the seedlings are too young to hazard any opinion about them.

These trials may suggest similar experiments to others. This is not a field where any one can assign a definite limit beyond which, in some favourable season, another may not go, and none should be discouraged by another's failure. Neither should the bold experimentalist follow suit to the most enlightened. As the most valuable discoveries in medicine have been made by those whom the faculty call quacks, so may like success await those who here adventure somewhat on their own inventions. Yet let them not go to far extremes, else failure and vexation will inevitably be the fruit of their labours.—ISAAC ANDERSON HENRY, *Hay Lodge, Trinity, Edinburgh.*

ANNE BOLEYN AND OTHER HIGHLY PERFUMED PINKS.

As recently as 1840, which seems but as yesterday, the best of all the spicy-scented flowers, the most wholesome of all the scents of flowers that one could get for love or money for Christmas-eve, was one sort of Dianthus, a cross-bred Pink between a common rose Pink and a deeper-coloured single seedling of a Carnation, and that sort was called Anne Boleyn. If any one would give me now a pair of plants of that Anne Boleyn I should feel very much obliged. The reason I want it is this: it was the very best cross that ever was raised between a garden Pink and a half-wild Carnation, as ninety-nine seedlings out of every hundred of all the Carnation seedlings I ever saw might be called. I want to cross with it again among the new races of English, Chinese, and Japanese Dianthuses, unless some one with more leisure should volunteer to do the thing for me.

We English florists are certainly the most extravagant class of men under the sun. We spend no end of time and money to get new plants from the ends of the earth. We increase and multiply them with an astonishing rapidity, and we cross as many of them as will submit to the process; and the moment we get hold of a seedling out of a hundred which is inclined to some strain or other, which some one or other of us has a fancy for, away go the ninety-nine to the rubbish-heap, and the pet seedling has more indulgence than would suffice to prove that ten or twenty of the seedlings which were cast out in the hurry had better properties in bud, so to speak, than the one which was made choice of, because its properties were one or two years sooner out of bud, and fit to be seen.

It is not money or skill we want at all—indeed, we have too much of both for our good; what we want is patience and industry in the prosecution of races of garden plants for improvement. There is not one class of plants that we prosecute for improvement, of which we might not have had double the number of sections, or strains, or class, or whatever we may call them, and of some of them from six to a dozen sections, and the plants in each of these sections might just be as good as those we now possess or have possessed in a single strain. These multiplied sources of enjoyment have been lost to us for our want of patience, and through a vitiated taste, which expelled every seedling of the ninety and nine because they did not seem to us to be so quick in showing of what properties and proportions they were made of.

Dianthus is one of the happy families to which we lend a helping hand; but like all the rest of the families which enjoy our support and patronage, ninety-nine out of every hundred of the seedlings are sent to destruction for not being what we, or some of us, pride ourselves in rearing.

Now, be it known to all whom it may concern, that of all the properties of which flowers can be possessed, the best property that any of the race of Dianthus can ever be gifted for my own eye and for my nosegay, is to be of the most grateful, spicy, or aromatic fragrance; and the next property to that is a most pleasing colour; and the third and only other point I would insist on, or be thankful to obtain, would be a habit of perpetual blooming, or what you might call an evergreen climbing Moss Rose with yellow flowers. Be it known, also, to all those who do not happen to know it already, that Anne Boleyn Pink is the most true sweet of all the garden Pink races, that its fragrance is a compound of that of the Clove Carnation and the wild mountain Pink, called plumosus, which wild Pink has the most genuine Pink scent of all the family, as the Clove is certainly and better known to be the most gratefully sweet of all the Carnation tribe. And, moreover, Anne Boleyn is the strongest constitution of all the seedlings we yet know of as crosses between some Pink and some Carnation, and yet retaining the full character and looks of a garden Pink at the same time: therefore, if Anne Boleyn produces pollen, or if it will take to the pollen of others, it would not be going back a step of twenty years to bring it up now for cross-breeding, but the very reverse.

Scent is fast falling out of Dianthus, or out of the Cloveworts, through injudicious crossing—I mean injudicious in the sense of scenting a flower. The Rose is in peril of the same overwhelming misfortune. A Rose without a thorn and without scent might do very well for a fashionable flower-gardener, but it would not do for a Rose to a lady or to a laundrymaid. Just so with a Pink or Carnation, or anything that might come from the union of the two, and that is my sole reason for wishing a cross bout with Anne Boleyn. But some long-headed fellow on the continent has been two or three years before me in the race—I do not mean the race of Dianthus, but the run to get the cream off the top of Dianthus, before it is mixed tops and bottoms.

The Pink called Dianthus hybridus multiflorus in the "Illustrated Bouquet," and which was exhibited for the first time before the Floral Committee this time last year by the Wellington Road Nursery, is undoubtedly a cross between the Anne Boleyn Pink and some pale variety of the perpetual tree Carnations. The paleness of the tree Carnation has taken the deep pink out of the Anne Boleyn side of the cross, and the new multiflorus is of a rose pink hue. But I shall get in my best plant of it from the window-sill and examine it again; and so I did, and find I have been mistaken in referring one side of the cross to Anne Boleyn. The other parent must have been much less sweet than Anne Boleyn, or else the fragrance of the particular kind of hybrid perpetual Carnation. The other side of the cross happens to be of very weak scent, as some seedlings do turn out often. At all events here is a key to the greatest want, and the most difficult want to supply twenty years back when I first undertook to have Moss Roses and Anne Boleyn Pinks in the drawing-room at Christmas, as I certainly did the next year after I went to Shrubland Park—that is, in 1811, and what a tremendous hard winter it was. How wonderful has been the progress we have made in gardening since that day; but none of the wonders are more wonderful than that the same parties can now have all but true Anne Boleyn Pinks at Christmas, without the least forcing at all. Dianthus hybridus multiflorus can be had by the score, or by the gross, or thousand, to come naturally into first bloom from the end of September to the middle of November, in mild autumns in the open ground, and they can be lifted, potted, staked, and put by for a week or ten days in a shaded place, and after that have the pots on the outside of the window-sill, just as I have them now, or inside where you please, or out in the conservatory—I mean out of pots along the front borders. Nothing can be more sweet than the old Cloves, if we could have them so. But when we come to cross for sweetness we shall use the pollen of all the Cloves, and of all the Pinks and common border Carnations, with the perpetual tree Carnations; and before the end of it all our Sweet Williams may be as fragrant as the name is.

Let us go at the object, however, like people of common sense and patience. The result itself, you must keep in mind, is to be the sweetest we can make of all our Cloves and Pinks, to supply rooms and glasses the whole winter through with cut flowers of that stamp, with symmetrical plants of them in bloom from the size of a No. 60-pot, to a pot of No. 16, as full as it will hold of no end of flowering-stems rising from quite a tussack of leaves, Clove fashion. Then by having so many different sizes of plants, as the difference is in pots from 60's to 16's, there will be no bother about being not able to fit the pots with what they have in the rooms to put the pots in. Some have one thing, some another, some are almost too small to hold a 60-pot, and some are not small enough. Then the way to effect the object is, to order as many packets of seeds of all the Clove and Carnation tribes as one can afford; from among the seedlings choose the colours you like best. They will be all but single flowers, but singles are the best for this kind of work. We want all colours for all tastes, and to be able to get them we must use every one of the crosses which we have already, including those from the Indian Pinks, as well as all that have been got from our own garden plants. Some of these have pollen and some have no pollen; some will seed by cross pollen, and some will not seed by any pollen; but which is which, and which will do, no mortal can tell just yet, the fact has to be proved in every way you take t. All we know is, that the garden races of Pinks, Picotees, Carnations, &c., will cross with Indian and Japan Dianthuses, and with our own Sweet Williams. The aim being to keep the old aromatic scent of the Pink and Clove in the seedlings, and to get as many of them as we can on the model of the hybrid perpetuals in other classes, and in this class of plants also, as is in[illegible] in Dianthus hybridus multiflorus, which is a true hybrid perpetual between a Pink and a perpetual-flowering Carnation.

Seeing the ice is broken in that plain cross, do you not see the [illegible]er already clear as crystal to the very bottom of the stream, [illegible] all kinds of fishes sporting between you and the bottom? Each one of them, take my word for it, might be made the parent [illegible] new rac[illegible] therefore, in the name of all that is sweet in [illegible] do not let the biggest of them absorb all [illegible] have as much of your care and patience as if it of itself would be the father or mother of many natures; and, with all you do, lose not sight of the sweetness of the family.

It has not yet been clearly proved when sweet-scented plants like these are raised by cross-breeding if the scent follows the pollen more than the pistil in the seedlings. We must, therefore, cross both ways, but in every instance let one of the perpetual tree Carnations be one of the parents.

To obtain very healthy free-growing plants, the very sweetest of the single half-wild-looking seedlings of the Carnation seed-packets should be made choice of for mothers; and as frills and fringes are just as likely to be sweet-scented and retain it as quakers' collars, take no thought of how the old florists banded together for obtaining "rose edges" to their seedlings of these races. Your aim and theirs ought to be as wide apart as the poles. They look to the eye, and we must look to the nose and nosegay. They exhibit in summer tents on the edge of a wilderness; but we will present our sweet offerings in the first floor drawing-rooms on Christmas-eve. So there is little danger in our coming in contact or in opposition with better people than our own.

Talk about forcing Pinks after that, and I could tell you at this moment how many kinds of Pinks have been forced during this century, and how many of these I had forced myself between the Paddington Pink and the mountain Pink, and on to deltoides Pink, and the Pink plumosus, for all the old gardeners had years and years at that sort of uphill work; but the next generation will have Pinks, Cloves, and Carnations which will come to bloom when you want them, be it in summer or winter; and that without more forcing than to lift them from the borders and put them in pots. Capt. T. Clarke's mule Pinks, single and double, are the only two kinds I ever attempted to cross. I never saw finer kinds or plants better to grow. The single kind seemed to have some few good anthers full of light blue pollen; but I could no more hit a cross or get a seedling from any of them than if it was with the pollen of the Oak, yet I had a thousand blooms open many days during the six or seven weeks they were in bloom. D. BEATON.

FLORA OF THE ROMAN CLASSICS;

OR, CATALOGUE OF PLANTS MENTIONED BY LATIN AUTHORS, WITH AN ATTEMPT TO IDENTIFY THEM.

(*Continued from page* 2.)

ACANTHUS.

THERE were two very different plants known to the Romans by this name. One was herbaceous, and, contrary to the received opinion, we believe that this was scarcely, if at all, mentioned by the poets.

The only passage in Virgil that can be applied to it is this:—

> "Errantes Hederas passim cum Baccare tellus,
> Mixtaque ridenti Colocasia fundet *Acantho.*"

(The earth everywhere yields the vagrant Ivies, together with Baccar, and Colocasia mingled with the shining Acanthus).—*Eclog*, iv., 19-20.

Whether these lines apply to the herbaceous Acanthus or not, we have very little doubt that it is synonymous with the *Acanthus mollis* of modern botanists, and which was used in medicine by old pharmacists under the name of *Branca ursina*, or Bear's Breech. This is a native of Italy and Spain, and is thus described by Parkinson in his "Paradisus:"—

"The leaues of this kind of smooth Thistle (as it is accounted) are almost as large as the leaves of the Artichoke, but not so sharp-pointed, very deeply cut in and gashed on both edges, of a sad green and shining colour on the vpperside, and of a yellowish green vnderneath, with a great thicke rib in the middle, which spread themselues about the root, taking vp a great deale of ground. After this plant hath stood long in one place, and well defended from the iniury of the cold, it sendeth forth from among the leaues one or more great and strong stalkes, three or foure foote high, without any branch at all, bearing from the middle to the top many flowers one aboue another, spike-fashion, round about the stalke, with smaller but not diuided greene leaues at euery flower, which is white, and fashioned somewhat like vnto a gaping mouth; after which come broad, flat, thicke, round, brownish-yellow seede (as I haue well obserued by [illegible] haue beene sent [illegible] of Spaine, and which haue sprung vp [illegible] for in our countrey I could neuer obserue any seede to haue growne ripe) the rootes are composed of many great and thicke long strings, which spread farre in and vnder the ground, somewhat darkish on the outside, and whitish within, full of a clammy moisture (whereby it sheweth to haue much life) and doe endure our winters, if they be not too much exposed to the sharpe violence thereof, which then it will not endure, as I haue often found by experience."

How closely this description agrees with one Acanthus of the classics we may easily appreciate by comparing it with the following extract from Dioscorides. The herb Acanthus, he says, has leaves much longer and broader than those of the Lettuce, divided, dark-coloured, thick, and smooth. The stem is 2 cubits high, of a finger's thickness, smooth, encompassed near the top at certain distances with long, prickly leaves, out of which come white flowers. The seed is yellow and broad. The roots are long, gummy, red, and glutinous.

Pliny the elder (*Nat. Hist.*, l. xxii., c. 22) in describing this Acanthus, says—"Acanthus est topiaria et urbana herba, elato longoque folio; crepidines marginum, adsurgentiumque pulvinorum toros vestiens. Duo genera sunt, aculeatum et crispum, quod brevius: alterum læve, quod aliqui pæderota vocant, alii melamphyllum." (Acanthus is a city and topiary (formable into figures) plant, with an outspread, long leaf, used for clothing the margins of water, and growing against banks. There are two kinds; the thorny and crisped, which is the shorter; the other smooth, which is by some called pæderos, and by others melamphyllus [dark-leaved]).

Columella (*De Re Rustica*, l. x., 241) confirms the opinion that this Acanthus of the Romans was our Acanthus mollis by saying, when describing the Artichoke, "Pallida, nonnunquam, tortos imitatur *Acanthos*." (Sometimes, being pale, it resembles the crisped Acanthus) for the entire plant of Acanthus mollis very much resembles the Artichoke.

The leaves of this Acanthus were adopted as a model by artists in ornamental work. They are peculiarly suited to this by their form, and bold varied outlines; and Vitruvius thus relates how they were first selected to adorn the capital of what is now called the Corinthian pillar. A basket closed by a tile was left with its bottom upon the soil, beneath which was a root of Acanthus. In the spring the stems and leaves of this plant grew up around the basket, and were bent back by the projecting tile. Callimachus, a famous architect, saw the elegance of the form and combination thus accidentally produced, and in designing some pillars destined for Corinth, he adopted for their capitals this Acanthus-embraced basket.

The other, or tree Acanthus, known to the Romans was much more frequently mentioned by their poets and other writers. Virgil speaks of it in the five passages following:—

"Alcimedon duo pocula fecit,
Et molli circum est ansas amplexus *Acantho*."

(Alcimedon made two vases and entwined their handles with the pliant Acanthus).—*Virgil's Ecl.*, iii., 44-5.

"aut flexi tacuissem vimen *Acanthi*."

(Nor had I been silent concerning the rods of the pliant *Acanthus*).—*Ibid.*, *Georg.*, iv., 123.

"Et cum tristis hyems etiam nunc frigore saxa
Rumperet, ...
Ille comam mollis jam tum tondebat Acanthi."

(Even when cheerless winter rent with its frost the rocks, he was clipping the leafy twigs of the pliant Acanthus.) —*Ib.*, *Georg.*, iv., 135-7.

"et pictum croceo velamen *Acantho*."

(And a veil embroidered with yellow Acanthus).—*Ib.*, *Æneid*, i., 715 and 653.

"Quid tibi odorato referam sudantia ligno,
Balsamaque, et baccas semper frondentis *Acanthi*?"

(Why should I describe to you the balsams exuding from the fragrant wood, and the berries or fruit of the evergreen *Acanthus*?)—*Georg.*, ii., 117-19.

This "evergreen Acanthus" was a tree, for Virgil begins this portion of his subject by saying, "Divisæ arboribus patriæ" (countries are distinguished by their trees), and then, after particularising the Ebony of India, and the Frankincense tree of Sabæa, he adds the two lines we have quoted.

That this Acanthus was valued by the Romans for its pliability is evident from the employment of the epithet "*mollis*;" for though this is Englished by the word soft, it is equally so by the word bending. Pliny the younger ("Epistles," l. v., Ep., 6) in describing his garden, says—"*Acanthus* in plano mollis, et, pene dixerim, liquidus." (Upon a level surface, is a pliant, and, I had almost said, a liquid Acanthus). It was evidently a single tree, for there was a walk around it, "ambit hunc ambulatio." In a following passage, after mentioning some Plane trees, he adds, "Post has Acanthus hinc inde lubricus et flexuosus." (After these an Acanthus waving and bending here and there).

Now, what tree not indigenous to Italy, yet known to the Romans, is evergreen, with waving pliant branches, has yellow flowers, exudes a balsam or gum, has fragrant wood, and berries highly esteemed?

Theophrastus gives us some further indications, for he says that this tree-Acanthus was so called because, with the exception of the trunk, it was covered with prickles; even the shoots and leaves were so. The tree was large, yielding timber 12 cubits long. The fruit grew in pods, after the manner of pulse, and was used by the Egyptians instead of galls in dressing leather. The flowers were used in garlands; a gum flowed from its trunk, and a large wood of it was near Thebais.

The *Acacia arabica* agrees with this description most remarkably. It attains the height of 40 feet in Egypt and Arabia, its native country; it is very spiny; its branches are long and pliant; its pods are necklace-shaped, like a row of berries; the wood is tough and durable; the skin of the pods as well as the bark of the tree is used in dying and tanning; the flowers are yellow, so as to be suited for garlands and copying in embroidery; and Hasselquist says not only is gum arabic but a frankincense obtained from it.—G.

TREATMENT OF OLD AGERATUM MEXICANUM —LILY OF THE NILE.

In reply to a query in a late Number of your paper you said that "old Ageratums keep well in a greenhouse during winter." Am I to understand by this that Ageratums grown from seed sown in the spring of 1861, if kept during the winter from frost, will answer for bedding plants in the summer of 1862? and if so, Why are Ageratums called "half-hardy annuals" in seed catalogues?

What is the best culture for the Lily of the Nile? Should it be kept in a pan filled with water?—B., *A Subscriber*.

[The answers to correspondents do not always apply to more than the persons answered. There is something peculiar in the case which is told to us in the letter, and we answer according to "something peculiar." Old Ageratums—that is, the plain and variegated kinds of Ageratum mexicanum, are the easiest of all plants to keep over the winter, and the most easy to make cuttings of early or any time in the spring. Ageratums raised from seeds in 1860 will do very well to plant out as bedders for the next threescore years and ten, if they are taken up before they are frosted, and are made into cuttings next spring. After that keep the very same plants from cuttings in the autumn, and do away with the rest of the plants, or keep the old plants and make cuttings of them in the spring. But, of course, the green-leaved Ageratum may be sown every year, and then it would be equivalent to an annual, and would need the treatment of half-hardy annuals just as the catalogues say.

If you have the Lily of the Nile the sooner you get rid of it the more to your comfort. In the first place, it wants a house as hot as that of the Victoria regia at Kew, and in the next place, it would need one of the best gardeners at Kew to look after it, and after all he might look foolish at last for not being able to bloom it. It is the Nelumbium speciosum, or Sacred Lily of the Nile.]

SKELETONISING LEAVES.

I have read with pleasure in The Journal of Horticulture for September 24th, page 503, an excellent article on the pretty art of skeletonising leaves, &c., taken from the *Friend's Intelligencer*. I approve of it all according to the plan of maceration; but sometimes if the leaves are too long in water the fibre will rot. The only thing I disapprove of in the article is that it takes two or three months for most leaves, and that it would require eight to twelve months' maceration for the Oak, as, I assure you, by a plan of mine I can skeletonise any leaf in ten minutes—the Oak being the easiest. I once had a prize and certificate of merit for fifty varieties of British fruit and forest tree leaves.

Any one wishing to know the secret may have it—I refer them to my advertisement in the present Number.—E. PERSAC, *St. Mary Clist, near Exeter.*

A WEDDING BOUQUET.

IN the papers that recently appeared in this Journal on arranging flowers there was a striking omission, and one the more inexcusable, because, in point of fact, the writer had seen and dissected some very first-rate specimens of a wedding bouquet.

This postcript comes, then, to supply that grave neglect, and I hope no lady reader will be wicked enough to call it the most important part of these little hints.

As a general rule in a bride's bouquet, as well as in the general arrangement of wedding flowers, white is certainly the colour to predominate.

It is, however, far more difficult to arrange white flowers well than to do those which give the help of colour, and some of the difficulties are even difficult to describe; though, as I have myself made up a great many of these white designs, I will do my best to describe the principal things that are essential in them. While, as to the mechanical part of the work, I must refer my readers to a former chapter.

Every one knows that there are shades of white, we may call them three—the yellow, blue, and pink tinge; and there is, also, the perfectly snow white, which is of all the loveliest.

The grand thing is to get plenty of this snow white, and then to add whichever one of the other colours may be preferred. The pink tinge, if not more than that of a blush rose, is much the most effective; but it must not be allowed to be deeper than the rosy tint of a pale pink shell.

I do not think any other colour is really good for bridal flowers. Other colours require a more foncé shade; and even the beautiful blue quite alone with white would look rather poor. The only way I think, at least, in which it comes in well, is as a fringe of blue encroaching here and there on the perfect white, and running all round it in little sprays of blue. I once saw a very pretty white bouquet thus edged round with blue. I am not certain now what the flowers were, but they had exactly the effect of pale Nemophilas, or Forget-me-not; and I think the latter would be, at least, *ben trovato.* These blue flowers peeped out like little stars amidst a shower of the lightest Ferns.

The mention of the Ferns brings to mind one of the greatest objects in introducing colour. Unless this is done the green itself is hard to keep sufficiently in the background. My readers will see at once that an ordinary bouquet deprived of its gayer flowers would be at once green and white, and this we have to guard against. At the same time, to have green is essential—no bouquet can do without it; and, I think, the way of best avoiding this serious objection is to have flowers to which green belongs so naturally that they can scarcely be deprived of it. White Clematis, Snowdrops, Banksian Roses, Flowering Myrtle, strike me at once to mention as amongst this number, and even here I prefer naming the common flowers —unsurpassable, indeed, in loveliness, but such as all must know. All flowers almost, however, have some green of their own, which cannot be unconnected mentally from the flowers when they are seen together.

The white Rose, for instance, with the spray peeping up beside it; the white Camellia, with its large shiny leaf; the Lily of the Valley with its snowy bells lying in their cool sheath, if we want green—and we must have green—it must be brought in thus.

Perhaps this is one reason why it is often well to make up much bouquets piece by piece on the smallest and lightest sticks, adding to each flower its peculiar green, and then grouping them together with a filling-up of Clematis, or of white Heath, or of something similar. White Jasmine is not amongst the most desirable, as the flowers drop so readily. A ground of Lilies of the Valley would, I think, look extremely lovely. White Violets would do tolerably, though a little too broken. White Lilac does very well; and double Chinese Primroses are only so far objectionable that they are a little stiff, and perhaps somewhat solid. I have seen white Azaleas, also, answer very beautifully. Perhaps Camellias, Azaleas, Lilies, and Orange blossom are of all the very best thing[illegible] have; but it does [illegible] for the filling-up, [illegible] ground, unless the[illegible] [illegible]

I will now proceed to give three or four separate designs, which may be done very shortly, taking for granted the explanations above.

1st. A perfectly white design. Centre Camellia, Azaleas gathered round it, but, yet put in lightly, and without trying to force a quite level surface, which is nearly impossible, and quite undesirable. Five more Camellias at intervals, mixed again with a few of the largest Azaleas standing lightly. A few Orange flowers may be interspersed, and then Lilies of the Valley, or white Heath, or Clematis. If the former, a few leaves of their own may be used, but they should be of the youngest and palest kind, belonging to roots which have not flowered, and should only just show their heads between the Lilies and their frame or case. If Clematis or Heath is used, the Orange flowers and some Lilies may be mingled with it; but in these snow white groups a very little green tells quite sufficiently, and no separate foliage need be used at all. The small pale green fronds of the Maidenhairs could hardly, however, fail to add some grace and lightness whatever may be the centre.

In arranging all these flowers it is very essential not to cut off the leaves a little below the flower as far as they are good; they tend to keep the arrangement lighter, and also to obviate the appearance of unnaturalness in removing green.

2nd. White edged with blue. In this arrangement a little more green is to be admitted in the central part; it, also, will bear somewhat heavier flowers, such as the Double Primrose; and Banksian Roses look very well in this case. They ought, however, to be mingled with larger flowers—Roses or Camellias. The half-opened Gardenias and the delightful thick-petalled Stephanotis are amongst the most charming flowers that can be employed, either in this or any other case.

The last line should be of small broken sprays mingling with blue. Lobelia, Forget-me-not, small Campanula, and prettiest almost of all blue Harebells, may make this border, and break into a waving fringe of Fern. Where Fern is used the beautiful little Harebells seem to be quite at home, shaded by it and peeping out amongst it.

For a blush bouquet the smaller flowers should be quite white, and only a few half-open Roses tinted; or the flowers should be white with a very delicate mixture of the palest pink-tinged Rose buds. The Multiflora Roses are amongst the very best to use in this way, their long tapering buds having such a waxen look.

Many Camellias and Azaleas have the faint stripe or shade of rose I speak of. In these cases, of course, care must be taken to have a sufficiency of real snowy white, and so to arrange it as to make it harmonious.

In any case where flowering Myrtle is used it should be continued, or at least repeated several times. It is, however, rather too dark a green for a quite white bouquet, though, sometimes, the fresh shoots do well to mount other flowers upon.—E. A. M.

ARRANGEMENT OF CROCUSES.

OUR garden lies behind the house, is of square form. As a relief, the wall has been built with a semicircular curve in the central portion at the back of the house, with curves at every corner, but there of greater depth. In the first, described as No. 1, east exposure, as well as in No. 2, south, I have placed three hives of bees. Observing the large quantities of pollen carried in by my winged favourites from a row of large Dutch Yellows, planted from corner to corner of No. 1, and that the ground around the hives is all the better to lie vacant during the summer, so that no shelter may be afforded to toads, snails, &c., besides affording free footing for inspection, under which pressure the roots do not seem to suffer after their withered straw has been removed. I have, therefore, determined to plant both bends entirely with these beautiful bulbs, excepting the shaded portions beneath the boards, and as they are to stand permanently, would like to arrange them so effectively that they may come up to that standard of perfection so requisite to please the critical Beatonian eye.

Having had the ground dug and prepared, I presume I must first and foremost start out the yellow row, and am then all ready to begin *de novo.* If I recollect, Mr. Beaton's idea was to plant in stripes or bands, decidedly superior in effect to the hotch-potch system. Now, in such spaces as I have described, whether it would be better to plant the band all of one colour [illegible] new well, [illegible] being strongest outermost, next entire band white, and so on; or each band of mixed colours beginning—say with white, yellow next, white next, and purple next, &c. What length in that case of each colour, if I plant every band with the same colour opposite in its neighbour, would have the effect of throwing the whole into stripes of the different colours up and down, the bends or at right angles to the eye and walk. How would this look? or should I study to lay down the ribbons so that there may be always a different colour opposite in the row above? or what other mode could you suggest as an improvement? As they thicken quickly, I presume 4 inches close enough from bulb to bulb, and row to row. How broad should I make the bands, or rather how many rows of same colour? perhaps I might leave 2 inches more from band to band, than from row to row? I mean to plant with three colours only—large yellow, large purple, and white, eschewing Cloth of Gold stripes, and such early varieties so as to have them all in bloom at one time. Would the old pure white be better for effect than the large lights, such as Sir Walter Scott and Queen Victoria? Perhaps having all large they would bloom more evenly. If you recommended planting bands with broken colour, then, perhaps, I might put in for variety, different light ones as they came round, as Mammoth, Majesteuse, &c.—Scotus.

[Your idea of a Crocus garden for the bees is capital, and that of planting them still better. Your plan No. 1, a half-moon, a little over 10 yards along the straight edge, and about 2 yards through the middle of the half-moon. On that, the centre axis, you have a hive, and there is one hive at the roots of the two horns of the moon. You look across the half-moon, not along from horn to horn, and the man in the moon himself could hardly err in planting such a space seen in such a way, with the only three colours in Crocus—white, dark, and yellow. The back and the two horns, or two angles, to be yellow—large Dutch, four rows in the widest part, then three rows as the space narrows, and two rows at the points and turn, the two in a volute of yellow back as far as the inner side of each hive. Then your purple in the centre and white next the walk will be more on the square and look exceedingly well.

We would plant three kinds of white for the front, and three kinds of purple for the centre—say one Queen Victoria, two Sir Walter Scott, and three Mary Queen of Scots, which Mr. Paul exhibited last spring before the Floral Committee—that is, shaded white. The first row of purple to be the lightest—say Ne Plus Ultra; the second row Prince Albert; and the third row the darkest purple, which we forget just now, on purpose to allow yourself a choice, or take only one kind of white and one kind of purple. Your plan No. 2 will only be the same arrangement on a larger scale.]

PROTECTING PLANTS IN A GARDEN NEAR LONDON.

My garden lies east and west, having a wall on either side. I wish to know, if I have some wire netting hung from hooks on the wall facing the south, and covered with some kind of matting, whether that will be sufficient protection throughout the winter for such cuttings and plants as Geraniums, Fuchsias, Calceolarias, Verbenas, Lobelias, Pentstemons, and Antirrhinums? Also will the roots of Lilium lancifolium and Amaryllis keep securely in silver sand, or what is the best method of keeping them?

I have two Fuchsias in the drawing-room window facing the west, or perhaps more correctly S.W. by W. I was rather proud of them, they looked so healthy and robust. I have kept them in the same place all through the last winter (there is a fire in the room every day throughout the winter), and expected a good show of flower this season. But alas! I have been disappointed. One of them has had only about six blossoms on, and all on one side of the plant: the other not one or any sign of one. Can you tell me the cause of this and remedy?—G. S. N.

[We do not think your proposed plan would enable you to keep such plants as you specify, unless the weather in winter were to be unusually mild. Then you might save some things plunged in sawdust, if covered with waterproofed glazed calico to let in light, and with a stout woollen or padded cloth, waterproofed outside, to put on at night and on cold frosty days. We think all this would involve more trouble than a glass case, which you might cover in a similar way, and either help in extreme cases by borrowing some heat from the house, or supplying with large earthenware bottles filled with hot water. Failing such means, we would advise keeping such plants in a room in which a small stove could be placed, or a fire be made in the fireplace with a damper in the chimney. The plants should stand on tables near the window on fine days and air be given to them; but in cold days and nights the shutters should be shut, and the tables be moved to the middle of the room, giving all the light possible when the temperature was a few degrees above freezing.

If the Liliums and Amaryllises are in pots, you could not do better than allow them to remain in them; and if the pots were set on the floor of a cellar at all dampish, the earth will need no water, and the bulbs may remain as they are until they begin to push, when they should be taken into the light, top-dressed and watered, and the best treatment that your rooms can afford given to them. If the bulbs are out of pots now and the roots mostly gone, you may keep them in sand as you propose in any cool place of the kitchen where they will not be too hot nor yet likely to be frosted; and as soon as they show signs of growth pot them into pure loamy soil with a little leaf mould, using the pots small at first rather than large. Water sparingly until you see that growth is freely proceeding, and then continue watering until the leaves begin to change; then refrain, and winter in the pots as above.

The Fuchsia plants were growing too much and too long in winter, when there was not enough sun to ripen the wood. Unless there is the assistance of a hothouse to grow on young plants in winter to bloom in summer, older plants of Fuchsias do best when treated as deciduous plants that need a rest in winter. When we have tried to save large Fuchsias out of doors in winter we were always disappointed the following summer—they never bloomed so fine as those hard pruned in or cut down the previous autumn. Keep your Fuchsia plants full in the sun now; give hardly any water, unless the soil is very dry and the leaves flag. When the leaves begin to turn yellow prune off part of the young shoots, and place your pots on the damp floor of a cellar, where they will need no water; or if in a garret, place damp moss or damp hay all round the pots, and in severe weather cover the tops with a little hay to keep the frost from them. In spring, as soon as the buds begin to break, examine the plants, prune back to the desired shape, place the plants in the light; and when the young shoots are a quarter of an inch long, shake away most of the old soil, repot in fresh, and give water in proportion to growth, and we feel assured you will have plenty of bloom in summer on your pet Fuchsias. If before fresh potting you were to dip the roots for a couple of minutes in clean water at 70°, you would not need to give water at the roots for some days; but if the days were sunny a sprinkle of clean water over the heads of the plants, such as you might shake from a dusting-brush, will do them more good. Do not over-pot or use too rich soil. It is better in your case to add a little rotten dung every fortnight or so to the surface of the soil, or just as much as you can hold between the thumb and finger of superphosphate of lime.]

LOBELIA SPECIOSA.

In reference to an article that appeared in The Journal of Horticulture, of October 1st, page 6, we must take the liberty of correcting you respecting Lobelia speciosa being unknown to the seed trade. Of course, you are aware that the greater part that was sold last year was imported seed, as but little was saved in England, owing to the wet autumn; but we beg leave to state that we have just harvested two large beds of the true Crystal Palace variety of Lobelia speciosa at our seed farm, at St. Osyth, and we have now orders for the same from most of the principal seed-houses in the trade.—James Carter & Co., 237, *High Holborn.*

A New Use for Apples.—We are threatened with a cider famine, not from the failure of the Apples, although a partial crop, but because they are likely to be applied to a more profitable purpose (so far as the growers are concerned) than in making a household beverage. It seems that the Manchester calico dyers and printers have discovered that Apple juices supply a desideratum long wanted in making fast colours for their printed cottons, and numbers of them have been into

Devonshire and the lower parts of Somersetshire buying up all the Apples they can get, and giving such a price for them as in the dearest years hitherto known has not been offered. We know of one farmer in Devonshire who has a large orchard, for the produce of which he never before received more than £250, and yet he has sold it this year to a Manchester man for £360. There can be no doubt that the discovery will create quite a revolution in the Apple trade.—(*Times.*)

NECTARINES SHRIVELLING, AND PEACHES FALLING OFF.

The last two seasons—the first wet, cold, and ungenial, this present one altogether the reverse in this part of the country (Bideford), the Nectarines and Peaches on a south wall (stone) have not ripened; the Nectarines some two or three hundred as fine as could be seen coming to their full size, instead of maturing began to split and shrivel up, but not to fall off; and not one this year or last came to perfection. The Peaches, equally large and splendid in appearance, instead of ripening, one by one fell off; no trees can or could look more healthy, or fruit more beautifully: hence my surprise. The subsoil is clay. But, if it be the soil, why should the trees grow and prosper, always in vigour, full leaf, and plenty of new wood? The drainage is good, the soil they are planted in is 3 feet or 4 feet from the foundation in height, and the water infiltrates through, yet not a single Peach or Nectarine came to perfection, or eatable either this or the past season; yet the weather each year could not be more different. Can any of your readers intimate a probable cause, and suggest a remedy?—J. C. H.

[It is difficult to assign a reason for such an extraordinary result, as we suppose everything necessary had been attended to. We should not have been surprised if such a thing had happened last season, as the fruit might be more glutted with moisture than they could well throw off by evaporation; and, therefore, splitting, and rotting, and falling off would be almost a natural consequence. If you have had as much dryness as we have had, such a result might have taken place from dryness at the roots. A similar result might also take place if the ground was thoroughly soaked, and a few very dull days succeeding after such a soaking. We noticed both cases in our experience. When the ground was soaked about the roots, and the weather dull and cold, the juices absorbed, did not find the fruit expanding to receive them; and the cracking of the skin was the result to give vent in the one case, and falling off in the other. Other trees similarly placed, only with a little heat applied to cause the fruit to expand with the absorption of the moisture, swelled off beautifully. On another occasion in a fine season like this, we found some cracking and falling as you represent; but on examining the soil down to the roots, we found it too dry: and, hence, there was not a sufficiency of moisture to meet the demands of the sun on the fruit. Some trees that were well watered escaped the evil. We have no reason to suppose that these were causes in your case, but we merely mention them as facts; and would be glad if some coadjutor or correspondent would try and throw more light upon the subject, as the fruit that did stand this season did, we believe, on the whole ripen well. There were few crops so good as yours. Even the blossom that appeared on our trees dropped to a great extent from the unripeness of the wood.]

FLOWERING DIELYTRA SPECTABILIS AND DEUTZIA GRACILIS IN JANUARY.

I have some plants of Dielytra spectabilis growing in the borders which I intend to force, and would like to have them in flower by the new year. A hint how to manage them would oblige.

Can I have Deutzia gracilis in flower at the same time? and will the same treatment do for both?—Bur.

[We presume the Deutzia is in pots; if so, keep them full in the sun, and give them a little water. About the first week in November top-dress them, and place them in a mild heat in November; if a little sweet bottom heat all the better—say top heat 50°, and bottom heat 70°. Increase the top heat gradually, so that at the third week it will be from 60° to 63°, and as soon the lower bud [illegible] the heat with mo[illegible] air to make the flowers robust and strong. You will have plenty of flowers if the wood is well ripened this autumn.

Take up the Dielytra out of the borders directly, save the ball if possible; but ball or no ball, use no bigger pot than you can get the roots in nicely, and pack sandy loam and a little leaf mould firmly round them. Then plunge the pots in a slight hotbed out of doors—say in a temperature of from 70° to 75°, leaving the tops exposed, but protecting from frost; and then in the second week of November treat much the same as the Deutzia, giving if anything more heat to encourage the flower-stems to rise.]

JOTTINGS IN NORTH DERBYSHIRE.

CLAY CROSS AND NEIGHBOURHOOD.

In the last Volume of The Cottage Gardener appeared an article by "Ben Bolt," on Eccleston's Conqueror Cucumber, which, I believe, induced many to try that useful variety. Having lately been in that district and jotted down a few observations, they may not be unacceptable to your readers.

Clay Cross is chiefly known from its extensive coal mines and iron works belonging to Sir S. M. Peto, and others. There is also the Wingerworth Company, who have extensive works on the estates of the late Sir H. Hunloke, and other pits of minor importance, yet employing many men. There is a building here in which are held the schools under an efficient master, and supported by the Clay Cross Company. Here are the Mechanics' Institute and Public Library, the latter containing, I believe, nearly 3000 volumes. Indeed, C. Binns, Esq., the manager, with liberality of spirit does all in his power to raise the intellectual and moral habits of the people, by supporting and sanctioning any scheme having for its object the permanent improvement of the working classes. With this end in view, there is held annually, the second Tuesday in August (the Wakes week), a horticultural and floral exhibition, in the grounds of the manager, when prizes are given, I understand, amounting to £200 or more. This season it has been decided by the Committee not to hold one out of respect to the feelings of the bereaved families of twenty-three poor fellows who lost their lives through the late melancholy inundation of one of the pits. The classes are as follows:—1st, For the men in the employ of the Clay Cross Company, vegetables, florists' flowers, window plants, and last, but not least, a prize of 10*s.* for the garden best cultivated and in the neatest condition. 2nd, Prizes varying from 3*s.* to 10*s.*, for cottagers within six miles round on paying a small subscription similar to the above. 3rd, For amateurs paying a subscription, for vegetables, plants, &c. This is open to all England. 4th, For gentlemen's gardeners, with the usual class of prizes, open to all England. 5th, Nurserymen and market-gardeners, open to all. 6th, For farmers; 1st, for the best cultivated farm in the occupation of a widow farming a certain number of acres, a silver cup; 2nd, for tenant farmers, a cup. Then prizes for various cereals, roots, &c.

This has given a great impetus to the love of gardening. One is famous for his Pansies, another for his Fuchsias; one for Dahlias, another for Celery; one for Rhubarb, another for Cucumbers; and it is a pleasing trait in the character of this Society, that the working men, many of whom are working down the pits and for months do not see daylight only on "pay Saturdays" (once a-fortnight), and Sundays—yet these men and others who are occupied in various ways in the iron works and other departments, lead the tradesmen in horticultural matters. And to show still more the kindly sympathising feeling of the noble, large-hearted manager, with the well-known philanthropic spirit of the proprietors, a second exhibition is held in the autumn for men in the employ of the Company, when prizes are offered for the best autumnal garden productions. It is held in the school-room, and I am pleased to say the Exhibition held there last September would have put to the blush many of the "blue flag practicals." So are the concurrent opinions of censors and gardeners themselves who were there, some of whom were Southerners. Such is the enthusiasm with which they take up these matters, that frequently other Shows are held at the Gardeners' Arms Inn, for teakettles, teapots, &c. Another pleasing trait in connection with this affair, and at the same time showing the provident habits engendered by the introduction of horticulture, is seen in the number of Cucumber-houses, pits, and frames, which are increasing every year, and still may they increase.

While speaking of Cucumber-houses [illegible] may as well here say, that there are, perhaps, some of the best growers of Cucumbers in this district I have ever seen—far surpassing any I have seen even among the professionals this season south of London. Some grow for sale and make a good profit on their outlay. Mr. Eccleston, gardener to C. Binns, Esq., is a sort of father among them, being held in great respect by all classes; if information or instruction is required, he is always applied to. I shall not attempt to describe the whole of the garden, but note his Cucumber and Celery. The latter was very fine when I saw it in July, nearly 37 inches high and 14 inches round. I did not see it surpassed among the growers even at Sheffield, and only equalled by one—viz., Mr. J. Limbs, of Sheffield Road, Chesterfield. The kind grown was chiefly Laing's Mammoth.

Here I saw and tasted the Conqueror Cucumber, which, in my opinion, has a fault or two. I certainly do not like the colour—it is too pale, and the shoulder is too long and small in proportion to the circumference of the other parts of the fruit; but for flavour and general cropping it is unequalled. Mr. Eccleston informed me, that by some means he found the fruit which he saved for seed had been impregnated by some other kind, as was proved by a plant growing by the side of another—one was true, the other had degenerated. He was very anxious lest some parties who purchased seed of him should have been disappointed or dissatisfied. If any should have had cause of complaint, I would advise them to communicate with Mr. Eccleston, as he has taken every precaution to save seed from a true stock and no others are growing near. He has a magnificent kind in bearing this season for the first time, which he calls Phenomenon. This will become a favourite with all growers, being free from ribs, a short square shoulder, beautifully spined. There is no coarseness about it; and the colour is good dark green, carrying a fine bloom. It is suitable for table, and is a good bearing kind. The fruit I saw was 24 inches long and still growing. I understood he purposed to send a brace of each to the Fruit Committee of the Horticultural Society this autumn.

The following notes of other kinds may be useful:—Mr. W. Walters had Hamilton's Black Spine, a coarse, deep-ribbed variety. Epps' Garibaldi, received direct from Maidstone. It is the most worthless thing ever sent out by the trade; it is no better than the Stockwood Ridge. Indeed, this season I have seen better fruit growing in the open air. Dreadnought carries a good bloom, is a good bearer, but a bad setter, has the longest footstalk, perhaps, of any grown kind. It is a strong, coarse grower, about 18 inches to 24 inches long. Eugenie is a kind, useful variety, and deserving of extensive culture. Webb's Improved Black and White Spines, received from an eminent firm in London, are condemned. Ewings' Waterwitch, a local variety from Godfrey's Black Spine, is a good, square-shouldered kind, very prolific, and requires a strong bottom heat to grow it well. It will be a good kind for market purposes. Barlow's Prolific still holds its place among the good ones.

Here I saw a useful kind of house lately built by Mr. Joseph Holland, a blacksmith, fitted with hot-water pipes for bottom and top heat, and heated with a small boiler, which must be called, I think, "Holland's Cottager's Boiler," a description and cost of which I will forward to you on receiving permission from him to do so. It is simple in its construction, effective in its work, moderate in price, and does not require much attention, and to judge by the look of the plants growing there it was all that could be required.

The effect of the late winter was very plainly seen. Oaks, Common Hollies, Aucubas, Laurels, and even Portugal Laurels killed to the ground in many places. Some of the latter at the residence of the late G. Stephenson, Esq., Tapton House, of, perhaps, forty years' growth, had their south sides killed; while at Hardwicke Hall (the Duke of Devonshire's), the only plant hurt appeared to be Pinus insignis. There is scarcely a standard Rose to be found alive. One of the most notable places is, perhaps, Kingwood, at Stavely, the residence of R. Barrow, Esq. The gardens lie on the south side of a hill. Advantage has been taken of this to form a series of terraces. There are some excellent houses here for Peaches, Vines, and plants; two conservatories, in one of which are some excellent Acacias, particularly A. grandis and A. pubescens. There are also six new vineries being erected here at a cost of £3000. The borders are covered with glass and heated with hot-water pipes. They are erected by Meredith, of Liverpool, I believe, and are of a substantial character.

I have not time to touch on Chatsworth, the "Palace of the Peak," or some other places. Fruit is exceedingly scarce in the district. One other note I find—viz., the Potato called Chatsworth, a second early kind and very productive. Mr. S. Low, of Tapton, is growing this season a large breadth of them. It is a fine, dry kind, and not so liable to disease as some others, generally ripening ere the electric storms come on.—Nickerbor.

POTATO CROP IN IRELAND.

It appears from the tables published annually by the Registrar-General that the yield of the Potato crop last year was smaller than in any year since the famine, though, with the exception of 1859, the quantity of land devoted to the crop was greatest of all. In 1847 it was, in round numbers, 28,000 acres; in 1860 it was 117,000. Yet, strange to say, the produce was nearly as great in the former year as in the latter, it being per statute acre fifty-seven barrels in 1847, and only eighteen barrels in 1860. This shows that the impression that the Potato was gradually recovering its former healthy condition is a mistaken one—in fact, it has been rather degenerating since 1847, the year after the general failure. This does not prove that the crop cannot be restored; it only proves that the means employed to restore it while the panic lasted have been unaccountably neglected. Potatoes get into a state of decay from causes that produce the decay of any other crop, and these causes are preventible. The farmers reverted to the use of worn-out degenerate seed, which they committed to worn-out soil. A proper selection of foreign seed and of fresh ground for the crop, due care in draining, cultivation, and weeding, all of which were anxiously attended to with the best results in 1847, would have produced similar results ever since, had not the farmers relapsed into their old lazy feeling of security, for which they are now again likely to be severely punished.—(*Times' Correspondent.*)

WHAT TO LOOK FOR ON THE SEASHORE.

(*Continued from page* 30.)

Crustacea—(*continued*).

The Common Spiny Lobster (*Palinurus vulgaris*).—On the western and southern coasts of England this strange specimen may be found in considerable quantities, and large numbers are despatched to the London markets. Its flavour is not considered equal to that of the common Lobster; still it has its admirers, by whom it is held in high esteem. This creature derives its name from the fact of its shell being covered with spines of various sizes. It is ten-footed, like others of this class; the first pair of feet in the male strong and robust, in the female smaller and weaker, but in either sex shorter than the rest, and having but one claw or finger furnished with tufts of hair. The remaining pairs of feet are all one-fingered also, and likewise tufted with hair. The eyes are large and globose, the external antennæ are extremely long, and have a strong, thick, spinous peduncle.

The length of the Spiny Lobster is about eighteen inches, measuring from the front of the shell to the extremity of the tail, and its colour is usually a purplish-brown, spotted with a dull white. The legs are a reddish-white, having longitudinal bands of reddish-brown.

The Norway Lobster (*Nephrops norvegicus*) may be passed over with but slight mention; for although it is occasionally met with on the coasts of Scotland, it must be looked upon as a still more northern species, the largest quantities being sent, as its name implies, from Norway. It is a very beautiful creature, measuring about seven or eight inches in length, of a pale flesh colour, rather darker in some parts than others. The segments of the abdomen are highly sculptured; the raised portions being smooth and polished, the depressions covered with thick, short, downy hair.

It is said that the Norway Lobster has been taken off the Irish coast, as well as the Scotch; but its appearance is comparatively rare, and it is very unlikely to come under the notice of the ordinary tourist.

The Common River Crayfish (*Astacus fluviatilis*) has strictly speaking no claim to our notice at all, inasmuch as it is an inhabitant of our rivers and large streams, and, therefore, no resident on the seashore. It has a rough, scabrous shell. Its anterior pair of legs are thick and rounded, slightly spinous. Its colour is a dull greenish-grey.

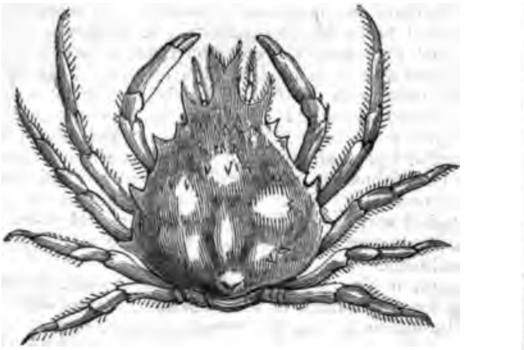
We now proceed to an examination of the Crab tribes, distinguished from the Lobsters by being short, instead of long-tailed; both species, however, are ten-footed.

THE LONG-LEGGED SPIDER-CRAB (*Stenorhynchus phalangium*).—This is one of the commonest of the small Crabs, and is found on nearly all parts of the coast. Professor Bell states that he has obtained it from Wales, the coast of Cornwall, Devonshire, Dorsetshire, and Sussex, from Scarborough, and from Orkney. He also states, on the authority of Mr. Hailstone, that "it is very common at Hastings, both among the rocks on the shore, and in deep water, and is occasionally caught in the trawl-net in vast numbers. Of sixty-eight specimens brought up at once, the proportion of males to females was as two to one."

The shape of the shell is triangular, the posterior angles being rounded, and the anterior surface furnished with a few spines. The first pair of legs are strong and hairy, and about twice the length of the body. Each hand has two fingers, one of which is moveable. These feet are smaller in the female than in the male; the remaining pairs of feet are very slender. The Spider-Crab is sluggish and timid; moves with very little animation, and dies very quickly on being removed from the water.

THE SCORPION SPIDER-CRAB (*Inachus dorsetensis*).—So called from its being found in the greatest numbers on the Dorsetshire coast, particularly at Weymouth. The shell of this specimen is also triangular and swelling; the angles rounded posteriorly, the anterior pair of legs strong and thick, and of some length; the others considerably longer, and very slender; the second pair is the longest, being more than three times the length of the body. This species is very widely distributed. Professor Bell says:—"I obtained it in Studland Bay, Dorsetshire, and at Hastings. Mr. Couch states that in Cornwall it is commonly taken in crab-pots, within a few miles of the shore at all depths. And Mr. Eyton informs me that it is found on the oyster-beds at Rhoscolyn, near Hollyhead. In Ireland it has been found in many places in the harbour of Cove, in the loughs of Strangford and Belfast, and in Dublin Bay. It is also recorded that Captain Beechy, R.N., brought up a specimen of this species alive in the dredge, from the depth of one hundred and forty fathoms, in the mull of Galloway."

THE FOUR-HORNED SPIDER-CRAB (*Pisa tetraodon*).—These creatures may be met with in considerable quantities among the rocks at Bagnor, and other places, concealed under the hanging vegetation; the shell is triangular, posteriorly round, and entirely covered, as well as the limbs, with close shaggy hair—the first pair of feet is extremely strong and thick, the hands nearly as broad as they are long, and two-fingered, the fingers meeting at the points; the remaining feet are only of moderate size and length, the second pair being about as long as the creature's shell, and the fifth not so long as the shell is broad. Beneath the hairy covering the shell is polished; the colour is a dull reddish-brown, which, on becoming subject to the action of spirit or boiling water, turns to a bright red; its usual length is a little more than two inches in length and one in breadth. There are several tubercles on the surface of the shell, and the beak is formed of two strong horns. This creature, like the rest of its species, is timid, lazy, and slow-moving, from which latter cause it is frequently covered with minute marine plants, which flourish among the roots of its shaggy coat.

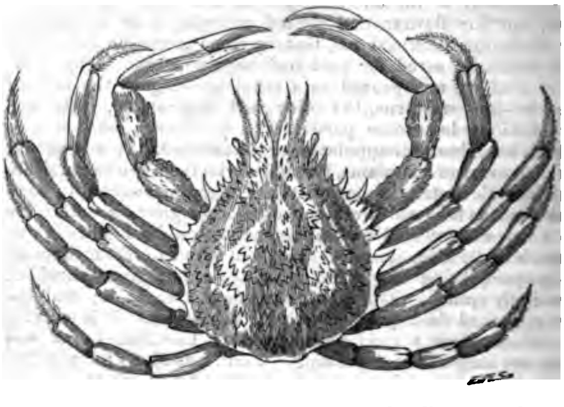


Female.

[illegible] S ARANEUS [illegible] species of Spider-Crab, [illegible] [illegible] among the coasts of Scotland [illegible] and Kent; on the shores of Devonshire it is of rare occurrence." Professor Bell says:—"I have received it from Worthing, in Sussex, and from the coast of North Wales. I have obtained it at Hastings where it occurs in considerable abundance, and dredged it on oyster-beds at Sandgate of large size, at from ten to twelve fathoms."

The Hyas araneus is almost the largest of the Spider-Crabs, measuring somewhat over three inches in length, and two in breadth; whilst the anterior legs are upwards of five inches long. The shell is of a triangular shape, rather elongated; the posterior portion being rounded, it is covered with small tubercles; but both shell and limbs are entirely destitute of spines. The creature, however, is covered with a thick, shaggy coat.

THE SPINOUS SPIDER-CRAB (*Maia squinado*).—This Crab is found in considerable quantities on nearly all parts of our southern and western coasts, and is the largest of the species, measuring sometimes eight inches in length, and six in breadth, the foremost pair of legs reaching a length of fifteen inches. The shell is convex and somewhat oval, getting, however, more triangular in shape as it increases in age. The shell is covered with countless tubercles and sharp spines. The anterior pair of legs much longer and larger than the rest. A quotation from Professor Bell, with regard to this and other Spider-Crabs, may be entertaining:—"Like all other triangular Crustacea, the fishermen inveterately term it 'Spider,' and they appear to have very little idea of any affinity between these forms and the Crabs properly so called. I remember some years since seeing in one of the back streets of Poole, near the water side, a little girl standing by a small table, on which was a plate containing two of these Crabs of moderate size, cooked, and for sale. On my accosting her with 'Pray do they eat these Crabs here?' she replied with a look of great surprise at my ignorance, 'They be'nt Crabs, sir, them's Spiders!'" As an astonishing announcement with regard to the fecundity of the Spinous Spider-Crab, we may also quote the Professor, who states on the authority of Mr. Couch, that a specimen of ordinary size will bear at one time upwards of seventy-six thousand eggs.—W.



(*To be continued.*)

CULTURE OF THE BANANA.

I HAVE a young plant (arrived a few weeks ago from Egypt) about 3 feet in height, and with two leaves each about 18 inches long. Will it require heat through the winter, or will it do in a greenhouse heated just sufficient to keep the frost out? I can put it in a vinery during summer. Please also state what sized pot, what sort of soil, and what quantity of water it requires.—J. D.

[If your Banana is one of the strong-growing and lofty kinds you will do little good with it either in a greenhouse or vinery. If a dwarf sort like Musa Cavendishi you might grow it in the vinery, if that vinery was rarely below 45° in winter. You can only succeed with your young plant by placing it in the warmest corner near the heating apparatus either in the greenhouse or vinery, and surrounding the pot with moss or tan, so as to keep the roots warm. At present it will be best to put the plant in a [illegible] rather smaller than other size, using [illegible] fibry loam and a little to encourage rooting. As the heat in your vinery gets up ant will then need another pot, and you may add some rotten dung or leaf mould to the compost. These, pro- speaking, are all tropical plants, and though they may ey will not thrive under common greenhouse treatment: the recommendation as to the warm place in winter. In rst winter, if the pot is plunged, little water will be d. As the leaves grow in summer, and plenty of heat can en, water will be needed liberally.]

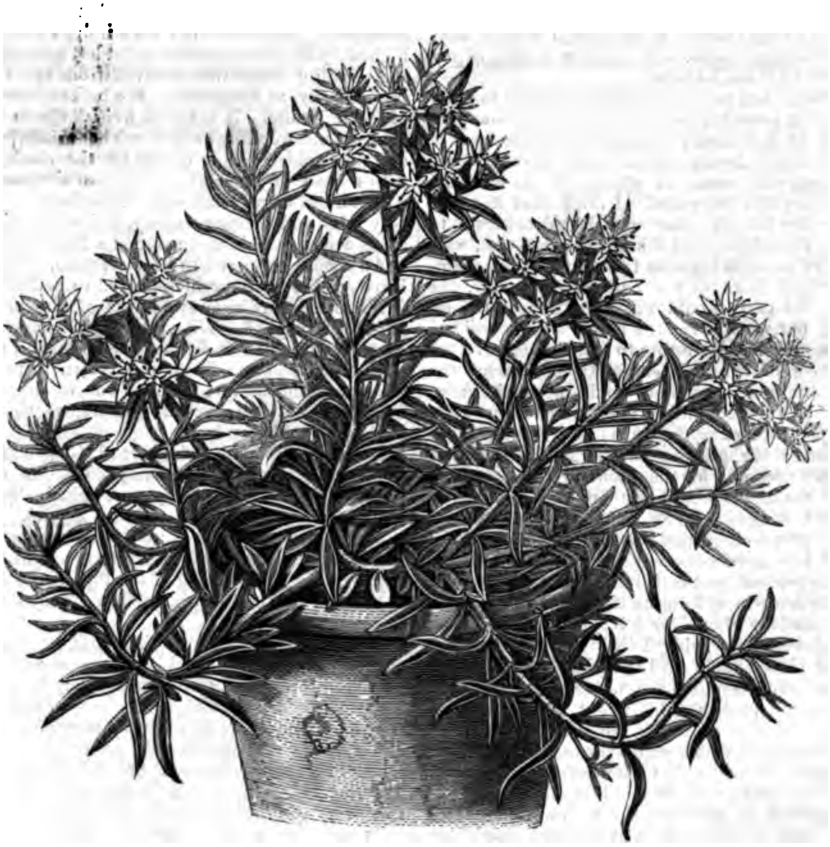
PAGATION OF A [illegible]RAWBERRY BY ITS FRUIT [illegible]EM.

AVE a Sir Harry Strawberry plant in a pot which I rooted st summer, by way of experiment, from a fruit-stalk. I just after the fruit had been gathered, and pegged it into a pot the same as a runner. The little plant has fruited the whole of this summer. I picked off the last ripe Strawberry this morning, and cut off another truss of blossom for fear the plant should be exhausted. It has been kept in the sitting-room, and placed outside the window when the weather was fine. Would you advise me to repot this plant? the pot it is now in measures inside 5 inches diameter at the top. Only two runners have made their appearance in June, which I cut off.

[Did you really root the stalk which carried the flowers and fruit in 1860? If so, did it make leaves? and, if it did make leaves, which part of the stalk did they come from, and what part of the rooted stalk did the two runners come from? We have no doubt about advising you to keep the pot just as it is till the fine weather in the spring causes the plant to make a fresh push: at that time we would shake off all the old soil, and replant it in fresh soil in the same pot. The fungus you enclosed is Geoglossum glutinosum.]

SEDUM CARNEUM VARIEGATUM (SIEBOLD).

s is a new Japanese plant; highly interesting and beautiful, oculent suffruticose dwarf habit, with compact branching), the first l shoots sub- afterwards bent, and ng. The ous slen- ound stems f a light or a flesh- clothed numerous haped green edged with on the pa- argins, and l exposure t the plant s a beau- variegated tint. Its growth it for either vatory, or ir summer . By its e habit and increase, it found an ble plant nt row ef- ribbon lines lower-beds, r decorat- summits all fancy ounds, di- ng the ef- n larger of rock- during the summer months, and equally suitable for covering the surface of dry, warm, gravelly banks around terrace slopes, or pillar bases. It is also a valuable plant for marginal effect around large vases and rural baskets; whilst in green-house-conservatories it appears to great advantage for permanent effect in baskets, vases, &c., suspended by brackets from the side walls.



For pot culture, it thrives in all ordinary light sandy loam soils, and for open-air beds or borders it luxuriates in a mixture of one-fourth finely broken or sifted gravelly sand or brick compost.

In autumn it should be repotted in masses for house-decoration throughout the winter.

It is introduced by Messrs. Henderson, of the Wellington Road Nursery, St. John's Wood, London.

GROUND VINERIES.

ST decline the honour of having invented the "ground ," my idea was merely to cover a space with slates, and er this a Cucumber-light. My gardener suggested the nd the furrow. The original idea, if it was an original ever carried out, as I heard of a person who covered a the wall of his house with slates, and trained Vines them, which did not ripen their fruit so well as against ral wall.

r. Rivers is due the credit of ripening Grapes on slates on the ground under glass, taking advantage of the earth's heat to assist the ripening. This answers thoroughly, a I saw the Grapes last week at Sawbridgeworth well ripened, and perfectly black. I would suggest an alteration to this plan, embracing all the advantages with some little improvements. I would measure out plots of ground—say 100 feet long by 6 feet 6 inches wide. I would take a spit of earth out on each side sufficient to raise the plot into a slight ridge. This is to answer three purposes. First, the trench would keep the plot high and dry; second, it would bring the ridge nearer to the hands in thinning, &c.; third, it would cause the distance between the lights and the earth to be even. In the centre of the ridge I should drive in small charred posts every 8 feet, leaving them out of the earth say 15 inches. On each side of the ridge I should place the largest slates, side to side, leaving a space of 1 foot between the rows of slates in the centre of the ridge, and a space of about 10 inches on the outsides. On these slates I should place the canes, arranging each plant so as to be able to add to the case as required. On the top of each post I would fix a staple, so arranged as to be able to fit a hook into it, by which the lights are to hang. These lights should be about 4 feet by 3 feet, and placed on each side of the ridge, suspended in the centre by the staples. On the outside they may be raised by stumps, and let down at night if required. (This case I think might do for forwarding Strawberries, &c.) Any gardener could make these lights. I should think that the top and bottom might be made of flat pieces of wood, to which the bars might be nailed; a little marine glue, probably, might here be useful; the bars might be grooved to admit of small squares of 16-oz. glass, 1½*d.* per foot, being slipped down without laps. The frame might be saturated with boiling coal tar six months before wanted, and if the glass be slipped into the grooves before dry there would be no occasion for putty. The lights might rest, probably, on bricks, and the ends be stopped with the same. I think these plots should run north and south. The Vines grow very luxuriantly in these cases, so that all superfluous shoots should be kept under to assist the effects of sun and air.

I have given rather a rough sketch of my plan, I hope it may be understood. Professional duties do not now admit of my paying much attention to these matters.

I am not quite certain that we could not cause plants to grow all the winter by taking advantage of the earth's heat—a plan successfully adopted by Mr. Rivers during the severe frost of last winter, when, by merely laying the pots with plants on one side and covering them with mats, he prevented the confined air cooling down to the freezing-point. I think that if a case were constructed somewhat like the one I endeavoured to describe above, with the addition of double glazing—*i.e.*, with a space of a quarter of an inch between the two glasses to contain motionless air, which is about the best nonconductor, the heat radiating from the earth would not only prevent the air cooling down to 32°, but would keep the temperature considerably above this; it would be interesting to test the temperature under different degrees of external temperature. During the day, particularly in sunlight, the plants would no doubt grow, even if sufficient air be admited, and at night, if shut up early and closely, the temperature, excepting in severe weather, would not, probably, be below the growing-point. A cheap porous material would answer very well for the frame of the lights and also the sides where the lights would rest on, this being saturated in a mixture of boiling coal tar and linseed oil, or creosote (6*d.* per gallon), the preparation used for steeping the ends of hop-poles, would act as a good nonconductor. The bars of the lights could be double grooved, and each bar being under-notched could be nailed to the cross-bars, forming the top and bottom of the light. These cross-bars should be 3 inches wide by 1 inch thick, the double-grooved bars being 1 inch wide and 1½ inch deep. Each pane of glass should be 15½ inches long by about 10 inches wide. The joint between the upper panes might be secured to prevent drip: probably this might be effected with liquid glass, a receipt for making which appeared in the *Field* newspaper a short time since, which might prove a useful article in all cases of fractures. How would Chaumontel Pears, on the spur system, do in these cases, each case holding five rods? If extra heat were required, as there would be no radiation, I should say that one pipe 1 inch in diamter would be sufficient.—SCRUTATOR.

ROYAL HORTICULTURAL SOCIETY.

[illegible] COMMITTEE.—The Committee met on Tuesday, October [illegible] Mr. Edmonds in the chair.

A report of the Oxfordshire Committee was received from [illegible] Bailey, the Chairman, which was read and highly approved [illegible] the interesting information it communicated.

Mr. Whiting, of the Deepdene, was the only competitor for the prizes offered for Pears and Plums. In the former class he exhibited Beurré d'Amanlis, Jersey Gratioli, and Brown Beurré, to which a Second Prize was awarded. In Plums he exhibited [illegible]kworth Imperatrice, Coe's Late Red and Coe's Golden Drop, which a First Prize was awarded.

A very interesting collection of Grapes was received from Mr. Thomson, gardener to Mrs. Dixon, Stanstead Park, near Emsworth, Hants. The object of this exhibition was to show how the different varieties succeeded in an orchard-house and in other houses without fire heat, and how superior the Black Hamburgh is for this purpose over all the other varieties. The bunch of Black Hamburgh was large, well set with large, well-coloured berries, which were excellent in flavour. Grove End Sweetwater, well ripened, and small bunch. Muscat of Alexandria, acid. Esperione, a long, loose bunch, small round berries with squashy flesh. Golden Hamburgh, a small bunch badly set with small berries, which were rather sweet. Muscat Hamburgh, bunch well set, berries small, with only a trace of muscat aroma, and rather acid. Royal Muscadine, large bunch, loosely set with small berries of good flavour.

Mr. Whiting, of the Deepdene, exhibited a bunch of a black Grape, name unknown. It was densely set with jet black, oval berries of good size, and a very tough, thick skin, but the flavour was rather watery and not remarkable.

Mr. David Thomson, gardener at Archerfield, near Drem, N.B., sent a bunch of a white Grape of high character. It was well set, the berries of a fine amber tinge, oval, and of good size, and with somewhat of a muscat aroma in the rich sugary and sprightly-flavoured flesh.

Mr. Thompson, of Stanstead Park, also exhibited a dish of very fine specimens of Salway Peach, finely grown and beautifully coloured. In flavour they were infinitely superior to those exhibited by Mr. Dwerrihouse at the last meeting of the Committee.

A seedling Pear was received from Mr. Ingram, gardener to Her Majesty, at Frogmore. We believe it was raised from seed of Marie Louise. It is called *British Queen*, and is most appropriately and worthily named. The fruit is large and pyramidal, of a fine golden yellow colour on the shaded side, and covered with a crust of fine cinnamon-coloured russet next the sun, and with a blush of rosy crimson. The flesh is firm and not crisp, very juicy and melting, sugary, and with rich brisk flavour, and a fine aroma. This was awarded a First-class Certificate.

An Apple, supposed to be a seedling, was received from Mr. Davis, of Colchester, which proved to be Hollandbury.

Three extraordinary specimens of Northern Spy Apple, were sent by George F. Wilson, Esq., Gishurst, near Weybridge. They measured 14 inches in circumference, and their aggregate weight was 36 ozs. They were grown in pots; the fruit set in an orchard-house and ripened out of doors in the open air. They were not quite ripe, and, therefore, the flavour could not at present be determined.

Mr. John Spencer, of Bowood, Chairman of the Wiltshire Committee, sent an interesting collection of Apples from the valley of the Severn. They were principally cider varieties, but some were very large, fine culinary Apples.

Mr. Newton, gardener to J. G. Graham, Esq., East Lodge, Enfield Chase, exhibited excellent specimens of Apples—Ribston Pippin, Margil, and King of the Pippins.

Mr. Turner, of Slough, exhibited very long pods of Dolichos sinensis.

Mr. Edmonds, of Chiswick House, sent two roots of an immensely large Turnip Radish, as large as a field Turnip. It was a new kind introduced from Madagascar, by Dr. Erasmus Wilson.

Mr. Cock, of Chiswick, sent plants of Brussels Sprouts grown from home-saved seeds, and they were quite equal in quality to any raised from seed of foreign growth.

FLORAL COMMITTEE.—A Special Certificate was awarded to Mr. Rogers, gardener to S. Noble, Esq., Berry Hill, Taplow, for some very splendid specimens of the flowers of Bignonia venusta, so superior as a stove climber. Messrs. Veitch & Son had a similar award for that exquisite little variegated plant Eriocnema marmorata; Messrs. Henderson & Sons, Wellington Road, for Pompone Dahlias; and Mr. Ivery, of Dorking, for Ferns.

First-class Certificates were awarded to the following:—Messrs. Veitch for the very ornamental variegated Cyperus alternifolius, the elegant Palm Calamus australis, and the handsome Alocasia macrorhiza variegata; Mr. Bull also for Cyperus alternifolius; to Messrs. Osborn & Son, Fulham, for some silvery-marked Anœctochiluses and some Orchids from South America; to Mr. Daniels, gardener to the Rev. C. E. R. Keene, of Swyncombe House, for Bougainvillæa glabra, not so handsome but more easily grown than B. speciosa.

There were many other interesting plants exhibited, but none which received a Commendation except Miss Henshaw, a creamy white Dahlia from Mr. Henshaw, of Handforth.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Cardoons, tie up for blanching when the leaves are quite dry; twist haybands round to prevent the earth from coming in contact with the leaves when earthed up. *Cabbages*, continue to plant out strong plants for Coleworts, and a succession of the best plant for standing as spring Cabbages. Prick out a quantity on a border or other convenient situation as a reserve for filling blanks that may occur through the winter, and for planting successions in spring. *Cauliflowers*, continue to prick them out under hand-glasses and in frames as they become fit to handle. Any that are now fit for use to be preserved in a cool place. *Celery*, take advantage of favourable opportunities for earthing it up, see that it is quite dry; the leaves to be kept together, and the earth to be applied in a pulverised state. If attacked by the fly, dredge it with soot and charcoal dust. *Herb-beds*, fill up and dress them for the winter. *Onions*, those that are stored to be looked over occasionally, and the defective ones removed. *Potatoes*, continue to take up the main crops, the weather at present being exceedingly favourable for the purpose. As it is but rarely that we have such a favourable season as the present for digging and trenching ground, and as there are but very few gardens but would be benefited by trenching, we hope the fine weather will not be allowed to pass over without attention to this beneficial operation.

FLOWER GARDEN.

Scarlet Geraniums, Fuchsias, &c., which it is intended to winter for use next season, to be taken up immediately and placed in a gentle bottom heat for a short time, to excite the roots to establish themselves in their pots; they should not be cut back, but should be kept over the winter just as they are lifted from the beds, and cut back only in the spring after starting them into growth, when the cuttings will root very freely in heat, and will make good-sized plants by turning-out time.

FRUIT GARDEN.

Continue to collect and store away the late varieties of Pears and Apples carefully, and see that those already stored are in good condition. When Walnuts have been collected and sweated for a week or ten days in a heap, then cleared of their outward covering and shaken in a sack, should be placed in earthen pans that are quite dry and not glazed, and to be covered with a piece of canvass or thick brown paper, and about an inch of dry sand over them; to be stored away in any moderately dry place; and when required for use, in succession, to be placed for eight or ten days in a damper situation, which will freshen them and cause the inner skin to peel off freely. Run a soft broom over the Peach and Nectarine trees with great care, to take off just the very ripest of the leaves. The present is the most favourable time for lifting and transplanting very vigorous unfruitful trees on walls. Apricots, Peaches, and Nectarines may be so treated with great advantage, and after the operation is performed they should be well mulched with short litter to protect the roots from severe frosts. Fill up all vacancies on the walls with young trees; never let this be left until the spring if it can possibly be avoided.

STOVE.

A temperature of 65° to 70° by day, and 60° by night, will suffice, still using a somewhat moist atmosphere in the afternoon and during the night, with a free circulation of air, keeping also a little ventilation on at night. As some of the Orchids become ripe, such as the Catasetum family, the Cycnoches, Lycastes, &c., they may be removed to a drier and somewhat cooler atmosphere. Pursue a kindly course of treatment with the Euphorbias, Gesneras, and such things for winter blooming; these will soon be of great service. The Phaius grandiflorus with the Stenorhynchus speciosus will soon begin to bloom; also the Cypripedium insigne and venustum. Let them have plenty of heat and moisture.

FORCING PLANTS.

All plants for this purpose to be got under cover if possible, placing them either in cold pits or making some temporary protection for them. Roses may be pruned and regulated, and the same of Lilacs. Rhododendrons, Azaleas, and other American plants to be potted without delay. Plunge all the pots in tan, or some other light material, and that before the frost has destroyed the outer roots.

GREENHOUSE AND CONSERVATORY.

Water, when necessary, to be given early in the day, so as to allow the superfluous moisture to be dried up before night; for damp among flowers at this season is more injurious than a moderately low temperature. On cold, dull, foggy days it will be advisable to use a little fire heat, with air during the day, so as to secure a moderately dry state of the atmosphere before night. The early-flowering Chrysanthemums that have for some time been staked and placed inside some structure will now be showing their bloom-buds, take care that they are thinned in due time, as a few well-formed blooms are to be preferred to many inferior and defective ones. By this time most of the specimen plants will have been securely housed. The conservatory will now become the principal feature of attraction for the winter, and to this house every plant which has a bloom upon it must be removed. Look the Camellias over, and thin out the flower-buds where necessary. The leaves also, if dirty, to be washed perfectly clean, and the same of Orange trees. Above all things keep a sharp look out for insects. If worms are observed in any of the large pots water them with clear lime water. The specimens on the walls and in the borders to be examined at the roots, and, if necessary, to receive a gentle soaking of weak, clear, liquid manure.

PITS AND FRAMES.

The rooted stock of Verbenas, Heliotropes, &c., to be well attended to, keeping them clear of green fly, and exposing them freely to the air on every favourable opportunity, so as to prevent growth as much as possible after this time, and to keep the plants hardy, in which state they will be much less liable to fog off under a week or two's confinement in winter.

W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Cleared away all decayed leaves from Cabbages, grub-infested leaves from Celery, running heads of Lettuces; and hoed and watered Endive, Lettuces, and a late crop of Dwarf Kidney Beans just setting and swelling nicely, which will have the protection of sashes placed over them, and a little straw over the sashes if a frosty night should come. These Beans come in very useful after those in the open ground are destroyed. Watered Scarlet Runners well, as the pods seemed to refuse to swell owing to being so dry at the bottom. Frequently run a rough straw band through the stakes, longitudinally in the row and near the top of the stakes, which often saves this valuable vegetable from the first frost. Late Peas are often prolonged by the same means. Find they are very good as yet. Thinned the last sowing of Turnips. Made another sowing of Radishes on a sloping bank, on which a two-light box can be placed by-and-by, and ere long will sow in a slight heat in a frame. Lifted the earliest Carrots, as, if longer in the ground, they are apt to be affected with the worm, and it is a good thing to have several successions, the young Carrots eating so much more sweet and crisp than older ones. Finished large brick tank, cemented to catch the water from orchard-house, as water is a matter of great importance with us. Strung and hung up Onions on every favourable opportunity, when from heavy fogs or drizzling rain the ground was too greasy to be comfortably worked upon.

FRUIT GARDEN.

Kept moving off every vestige of a runner in the *Strawberry pots;* and whenever rain threatens to be continuous will move them under protection from wet at least. Glass is best for this purpose when it can be spared, with plenty of air back and front, such as the floors of common orchard-houses; and in default of these the pots might be built in stacks to throw the water past them, or plunged in beds, and any simple means adopted for throwing past them the heaviest rains, and saving them from the severest frost. A little frost at the end of October, or about the third week, does good rather than otherwise, as it arrests all growth; and if any little sun reaches them after that it helps to more thoroughly ripen the buds. We frequently see Strawberry-pots standing out at Christmas exposed without the least protection, and soil and pot frozen as hard as a cannon ball. Need we wonder that fibres are snapped, and that pots are broken by such exposure, and that the best-looking plants disappoint the grower in the little fruit they render afterwards? The least such plants deserve is to be plunged, and the surface covered with some nonconducting substance, such as straw, to keep out severe frost. If in addition to this they be protected from rains and snows from November to March, the early-forcing part will pay for all the trouble in more plentiful productions. Watered the plants pricked out in the border to be raised in March and April if wanted for forcing. They will do well at that time. For early forcing two things are essential—firm potting, and the pots full of roots and the buds getting ripe before the middle of October. For expediting that ripening we do not like our pots to be plunged when growing; but we would resort to plunging or any other means to keep severe frosts and heavy rains from the plants and pots, after the middle of October.

Some Figs in pots, not likely to ripen their fruit in a cold house, have been removed to a pit, where fire heat can be given to perfect them. Unless the autumn should be fine, it is rare that Figs are worth eating after the third week in October. The same may be said of Melons. Have cleared most of ours out, and placed fruit worth keeping in a warm place in a vinery. Have smoked the vinery with a little tobacco, bruised Laurel leaves and a few Capsicums cut into pieces, as the thrips was making its appearance—a nuisance we got some years ago, by placing some Azaleas there to help them to make their wood more freely and early. Removed all plants from the late vinery, and raked the floor that all might soon be in a dry condition; and looked over the bunches, to see that no diseased or rotting berries were present to affect their neighbours. A little fire will be put on most days and air given freely, the air never being taken all away at the back except during a frosty night. Peach trees and Apricot trees have been gone over and every lateral removed, the longest shoots shortened, the ripest leaves brushed off, and those yet quite green shortened in their length, that the sun might have more free access to the wood and buds. Some Vines in pots, put in too late to fruit much next year, have been put into a pit, where they may have a little fire heat to ripen them at the base.

ORNAMENTAL GARDEN.

Means will be taken soon to remove all Fuchsias and things of that kind from the conservatory, and to fill with Azaleas, Camellias, Epacris, Citisus, Cinerarias, Primulas, &c., and by-and-by with Chrysanthemums. Chrysanthemums should now receive what tying and regulating they require, and be watered with manure water; and where very large flowers are desired have some of the buds thinned out, and be protected from sudden frost, or any lashing, heavy, cold rains. Salvia fulgens and splendens will also come in well as contrasts; and if the conservatory ranges at night from 45° to 50°, Gesnera zebrina, Euphorbia jacquiniæflora, and Poinsettia pulcherrima brought on elsewhere will bloom well in the warmest end of the house. A few late Fuchsias may also still be retained; and the Fuchsia serratifolia is a fine winter-flowering kind, and contrasts well with such plants as Justicia carnea, flavicoma, &c.

Neapolitan and other Violets should now be potted or planted in beds under glass for the winter. If the situation is warm and the ground light and sandy, the Neapolitan does well planted out in sandy loam and leaf mould. In cold places, where early and continuous gathering is desirable, it is best to build a bed of dryish litter and a few leaves, just to be raised 2 feet or so from the ground, and to yield the mildest possible bottom heat. The use of the bed being more to enable linings to be applied to throw in a little heat in cold weather than for the purpose of getting much heat now. Every runner should be carefully removed, every leaf at all withered or showing signs of mildew; and if traces of mildew or red spider should appear, every plant whilst held in the hand should be dusted under the leaves with a mixture of sulphur and bruised charcoal. In planting, water as you go, so that the dry soil may be on the surface of the bed; and this and also painting the back and ends of the frame with sulphur will generally set the last vestige of red spider adrift. In potting, put the fresh loamy soil firmly round the plants, and do not use pots larger than will let the [illegible] conveniently in.

BULBS.

We have not done much with bulbs of late; but the sooner those who intend growing them obtain them the better it will [illegible] and if not convenient to pot them or plant them, the bulbs may be pla[illegible] anywhere under protection in sweet, kind soil, covered [illegible] d neither potted nor planted out until they begin to [illegible] This is the best plan for those contemplating beds of [illegible] Hyacinths, &c., in the flower garden. The be[illegible] longer in their summer garb, and [illegible] dug, and every attention paid to get the ground in the kindest possible condition for the reception of the bulbs, whilst the bulbs are all the time making progress in your reserve garden. A little good rough leaf mould should be mixed with the soil in which bulbs are placed for this temporary purpose, as then they will lift with little balls, and never feel the removal, but will strike away into the nicely-pulverised soil at once. This is better, much better every way, than making holes in a hard bed in which to insert the bulbs before it is possible even to dig the bed on account of the crop it now contains.

BEDDING PLANTS.

We can add little to what was said last week. With a little mild bottom heat, and air left on, almost everything may be struck between this and the end of October, and will stand in little room in winter. For this we chiefly use what are called 60-pots, a third filled with drainage, and the rest with sandy loam, and for small things a little white sand on the surface, with one row of cuttings close to the edge all round, and the points of the cuttings pointing inwards, so that the pots may stand close to each other. We have just been putting in some good Rose cuttings in this way, bedding Pelargoniums, Variegated-leaved Geraniums, and generally these turn out fine plants in the spring. We have also found Anagallis and Verbenas do well; but care must be taken that the latter have no thrips on them, so see they are all washed away. Even at this late period we would prefer such cuttings to securing old plants; but all who have old Geraniums that are pets, had better adopt some of the plans spoken of by Mr. Beaton last week.

In the case of *Calceolarias* we have been a little nonplussed, as we like to strike them cool on a porous bottom. Well, the only place we could command, was some six lights of a brick-pit, emptied of boxes of Geraniums, just making roots nicely, and which were at such a distance from the glass as never to need shading. But the very depth was against our Calceolarias, which we did not wish to be more than 15 inches from the glass. So, we took some littery dung that had been thrown together until it had caked and heated itself white, and was not, therefore, likely to heat again, unless some damp and water was getting to it, which it was not likely to do except slowly during the winter. We put, therefore, about 15 inches of this litter in the bottom of the pit, well shaken, and well trod. Then above that 3 inches of rough leaf mould, well trod again, and then a sprinkling all over with lime, which was incorporated with the leaf mould to destroy any worms. Then 2 inches of sweet brown loam, and all well trod again. Then 2½ inches of loam and sand well mixed and sifted together, and a sprinkling of sand on the top, and all well beat level with the back of the spade. Here we will commence to-morrow to fill these six lights, and shall most likely find more room afterwards, using the short, stubby side shoots as cuttings about 1½ inch to 2 inches long, and from these we will remove a good portion of leaves, leaving the points and the buds on the sides, and inserting them in rows a little more than 1 inch apart, and 2 inches from row to row. There they will remain until planted out thinner under calico in March. Amplexicaulis we will place in pots, and try to get where fire heat can be used, by November, as it is so much more tender than the rest. By a similar plan last season we hardly lost one per cent.—R. F.

TRADE LISTS RECEIVED.

A Catalogue of Plants Cultivated by George Jackman & Son, Woking, is an excellent general catalogue; and to the Fruit Trees and Roses are appended useful descriptive notes.

William Chater's List of Superb Double Hollyhocks and Pansies, Saffron Walden, will be found useful to those who take an interest in these flowers.

Supplément [illegible] *Catalogue de l'hiver* 1860, *des Pepinières André Leroy, à Ange*[illegible] consists principally of Ornamental Trees and [illegible]

TO CORRESPONDENTS.

[illegible] that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editor of the "Journal of Horticulture, &c.,"* 162, *Fleet* [illegible]

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Altering Flower Garden (*Young Gardener*).—We never give plans, we only criticise those proposed. Cut down your Sea-kale just before you wish to commence forcing it.

Hyacinths and Tulips in Sand (*M. C.*).—You must add water as often as the sand appears dryish, but not otherwise. Late-flowering Tulips could be grown in the same way.

Muscat Grapes Shrivelled (*A Subscriber*).—The shrivelling, in all probability, arises from the roots being too cold in proportion to the temperature in which the Grapes are growing. If the roots are outside, cover the border every night. but uncover it during sunny days. We should remove the soil until we came to the first roots, and then return over these not more than 6 inches deep of fresh, rich, light, warm soil; covering and uncovering as we have said. If the roots have descended deep, or are in a wet or heavy subsoil, they should be lifted to nearer the surface in the mode we have often directed.

Wintering Scarlet Geraniums (*Rector*).—You will have seen full directions in our pages last week. Buckwheat, or Brank, should be sown in May.

Indian Corn (*A Devonshire Vicar*).—In your climate Indian Corn would probably ripen annually; but in less temperate districts of England it has been proved to be too uncertain a crop. It requires a very long and hot summer there to ripen. It is propagated by setting the seed in equidistant rows, from 2 feet or 3 feet to 5 feet asunder. The proper season for planting it is from the middle of April to the beginning of May. For this purpose the earth is opened with a hoe to the depth of 3 inches or 4 inches, and in each hole are deposited four or five grains at a little distance from each other. As soon as the young plants appear, the weeds are carefully eradicated, and the earth gradually heaped around them, till the ears appear; after which they are left till the harvest arrives. The ears are then gathered and dried in an open situation; for if this corn be heaped together, it is apt to ferment and putrefy, or to sprout and grow. The best method of preserving it is to husk, or thrash it out, as soon as the harvest is completed, to dry it perfectly in the sun, and deposit it in cool, dry, and airy situations. Maize, in countries where it is extensively grown, is subservient to a variety of purposes: its bulky stalks afford an excellent winter food for cattle, provided they have not been cut in too dry a state. The American Indians parch the corn carefully over a fire, without burning it, after which they pound it, sif he meal, and preserve the latter for their constant provision. In the United States excellent bread is prepared from Indian Corn by kneading the oiled flour into a stiff paste, either alone or mixed with that of rye or wheat, hich is fermented with leaven or yeast, and then regularly baked. This read is called Johnny-cake. It is sometimes made from the pottage of round Maize, called homony, and is extremely palatable and nutritive. he Americans also convert the Maize into a species of malt, from which, as ell as from the bread itself, they brew a wholesome beverage. The many urposes to which this grain may be applied, will be found well set forth in obbett's work.

Removing Jasminum nudiflorum (*Rector*).—October and November ould be a good time to remove Jasminum nudiflorum; but as that is its atural time of flowering it should not be removed then, except in a case of ecessity. The end of February is the next best time to remove it.

Barnton Beauty Geranium (*J. M. B.*).—Cotton wadding is the very orst thing to pack flowers in. We could not disentangle the flowers, or see hat your seedling is likely to be. The petals were mashed into the adding.

Work on Soils (*A Constant Reader*).—Morton "On Soils" will suit our requirements.

Seedling Carnations (*G. W.*).—Damp is the great enemy of Carnations. ot off your seedlings into single pots about 3 inches across; keep them in a old frame, and cover up when frost makes its appearance. In spring, plant hem out, or better still grow them in pots. The soil to winter in had better e nearly all loam. Drain the pots well.

Dahlia Tubers (*A Young Amateur*).—The circumstance you mention ould make no difference whatever.

Ground Vinery (*F. G. S.*).—This useful structure, described at page 30, 30 inches wide at the bottom, and 15 inches high from the ground to the pex of the roof.

Melons (*A Young Melon Grower*).—None will suit you for exhibition in une, July, and September, and to be grown on a dung-bed, so well as either e Beechwood, or Trentham Hybrid.

Catalogue of Stove Plants, &c. (*J. Findeuy*).—Write to some of the ading nurserymen; they will send you a catalogue gratis. We do not blish such.

Crocus-glasses (*Edith*).—None but the finest bulbs of Crocuses should employed for growing in water, and such bulbs we have never found too nall for the cup of those glasses. However, if you determine to use small lbs, though it would be cheaper to buy finer, you may have small circular ates of zinc cut at any tinman's, just to fit the cups of the glasses, and have small hole cut out of the centre of each zinc plate.

Tenant Removing Greenhouse (*W. P. T.*).—Have a wall-plate fixed to e leads on the roof of your house, and then fix the greenhouse to that with rews; you may then unscrew and remove it at any time, leaving the wall-ate. How can we tell you how to stock a greenhouse in London without owing what kind of plants you prefer; when you wish them to bloom; at is its size; or whether is is heatable in winter?

Soil for Camellias and Azaleas (*An Old Subscriber*).—The sample closed to us is of the right sort, but should be mixed with a little leaf uld.

Verbena and Pansy Seedlings (*G. Boothby*).—The Verbena was so withered that nothing can be said about it. The Pansies are inferior to many varieties of the same class now in cultivation; and very much so to some of the newer ones coming out this season.

Rainfall (*C. Fullbrook*).—The meterological calendar is quite correct. The agreements are recorded as we have printed them.

Wintering Young Plants—Stages—Celery Fly (*J. Wilson*).—We have no doubt the stoves will answer the desired purpose. It will be as well to have them flat on the top to receive a vessel of water. In such a glazed house, if there was a convenience for a small furnace outside, we would take a six-inch flue round the front and end, and back again below the tiles of the floor if they could be raised without trouble, and that would dispense with all the bother of the stoves. The floor of the house will hold a great many pots without a stage. However, you might fill the stage, and a good portion of the floor likewise. There is no remedy for the Celery now but picking off the attacked leaves and burning them. When such an attack is dreaded a little lime and soot thrown over the plants will prevent the fly depositing the eggs. Nothing will reach the grub that is securely defended by the two skins of the leaves whilst he feeds away inside. We have a little of it, and have not been troubled previously for twenty years, and hence our carelessness in not preventing the eggs being deposited. We should have expected myriads of caterpillars on our Cabbages if we had not sent a boy to beat down the butterflies.

Beds under Trees (*A Novice, &c.*).—The bare space under your group of Cedars would make the best and earliest flower-bed in the spring if you planted it now with Winter Aconites, Snowdrops, and a succession crop of Crocus, to come in in February, and go off in April; and the mice must be trapped. In April sow the space with common hay seeds from the stable-loft, and some of the grasses will be sure to do.

Coarse Grass on Lawn (*W.*).—The grass on your lawn is not one-half so coarse as that on the turf with which the new garden of the Horticultural Society was greened; but by sowing plenty of white Clover seeds in February, and by constant and oft-repeated close mowings you may, in two or three seasons, have a lawn soft as Epsom downs. Coarse lawns require to be very closely mowed once a-week all the summer, and as late and as early as the blades can get a bite at it; that is the only secret.

Various (*A Novice and Old Subscriber*).—Nothing whatever could be made of the flowers and leaves; they were as much dried up as if they had been in an oven. If not securely sent, any neighbouring gardener or nurseryman would not hesitate to give you the information. The mode of sending such things to us has often been mentioned. In such circumstances the best mode to heat such a house would be by a small iron stove, with the funnel passing through a square of your glass window. In winter the rest of the square might be iron, with the hole left for the size of the funnel; you could remove that in summer, and substitute the glass square if you thought proper. In a fine season the Chasselas de Fontainebleau, in other words the Royal Muscadine, will bear and ripen on a west wall; but it would do better on a south wall. Plums for wall—Greengage, Reine Claude de Bavay, Jefferson's, Coe's Golden Drop. For bushes—Greengage, Orleans, Victoria, Washington. The New Hawthornden is a fine Apple for jelly. The Ribston is much esteemed for preserves.

Many Questions about Geraniums (*E. Mahy*).—Apologies will never excuse too many questions in one letter. 1, Some plants do and some do not show signs of being crossed in the seedling state. You did not say what plants you crossed. 2, Plain-leaved Geraniums are just as liable to produce variegated seedlings as the most variegated plant. 3, There are many double Geraniums, and none of them worth much. 4, Half-double Geraniums are more likely to give double seedlings than single flowers. 5, Champion is not a very good Pelargonium. 6, Pearl is one of the best, and most commonly grown Pelargoniums. 7, Your semi-double Pelargonium with the "slim petals" is a very old purple kind, and never gives a double seedling; at least not for the last forty years; but it is much older than that.

Fuchsia many-sepaled (*G. K.*).—We cannot tell *why* your Queen Elizabeth Fuchsia has so many sepals; but this transformation of stamens into petals and sepals is not uncommon.

Strawberries, &c. (*B. S. D.*).—If you cannot get the Strawberry under the name of Duchesse de Trevise, try for it as Vicomtesse Hericart de Thury. It is the same thing. Why do not nurserymen advertise these things? Nelson's Glory Apple must be the Nelson Codlin; and Omar Pacha is not yet sufficiently known to have a reputation.

Distance of Vines from Glass (*Nottinghamensis*).—About 1 foot is a good distance from the glass for the wires to be placed. We answer only one question out of five, as we must put an end to the practice of sending so many questions at once.

Name of Grape (*C. P. G.*).—It is a Black Hamburgh, but the berries are small.

Names of Plants (*H. B.*).—1, Argemone mexicana; 2, Hydrangea quercifolia; 3, Clematis tubulosa; 4, Polygonum orientale album. (*A Subscriber*). —1, Asplenium bulbiferum; 2, Agathæa cœlestis; 3, not sent; 4, Linum grandiflorum; 5, Pilæa serpyllifolia; 6, Adiantum trapeziforme; 7, Selaginella cæsia; 8, Rhodanthe Manglesi; 9, Portulaca, no flowers. (*D. Cameron*). —The Scurvy Grass, Cochlearia officinalis. It is a seaside plant. A pinch of fresh seed of it, if you have any, would be accepted by us with thanks. (*I. O. G.*).—1, very imperfect. An Eryngium, probably cœruleum; 3, Astrantia maxima; 2, Spiræa barbata, sometimes called japonica in gardens.

FLOWER SHOWS FOR 1861.

November 6th and 7th. Royal Horticultural Society. (Fruit and Chrysanthemums.) *Garden Superintendent*, G. Eyles.

November 12th and 13th. Stoke Newington Chrysanthemum Society. *Sec.*, W. T. Howe.

November 14th and 15th. Crystal Palace. (Chrysanthemum Show.) *Sec.*, W. Houghton.

N.B.—*Secretaries of Societies intending to advertise in our columns will oblige us by sending an early intimation of their exhibition days.*

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

JUDGING POULTRY.

It was not my intention to have trespassed again on your valuable space, but for the remarks which appear in your last Journal I trust you will grant me another portion of your columns.

The object I have in view in proposing a plan is, not to attack the honour or known integrity of our several respected poultry Judges; and under any plan however good, for my own part, I should be sorry to see them retire in favour of any young men, for more competent we are aware cannot be found, for their great experience must have given wisdom.

My idea is entirely for the benefit of the useful institution of poultry exhibitions. As far as they concern me, I have reason to be satisfied and have expressed myself to that effect before, and, therefore, consider myself not of the number of "riled or disappointed exhibitors."

It is my intention to show the necessity for amateurs, breeders, &c., to co-operate without expenses of any kind on the committees. This, I believe, I mentioned in my former letter, but which did not appear; also, they should even pay the ordinary charge to the exhibition for the benefit of the general funds.

In reply to Mr. Ballance's letter, I do not believe any of the exhibitors think of any incompetency of the present Judges, and, as a rule, believe, of course, the majority to be honestly and fairly judged; but, as it is clear from the letters published that there is dissatisfaction, not only in poultry judging but in judging Pigeons, Dogs, and Rabbits, it must be evident my desire is *pro bono publico*.

As regards the other letter in the same Journal, I feel rather astonished at the temper there shown by one who adopts the cognomen of "JUSTITIA."

I never heard a person consider poultry judging a sinecure, however great the number of presents he may receive from breeders, &c.; but I have been told that it is frequently attended with much personal pleasure.

For the plain plan I propose, I desire nothing but what should be approved by all concerned. If "JUSTITIA" will assert that all are satisfied, I will send the names of some who have cause to contradict.

My motion is not an anonymous attack upon our respected Judges, as he says, my name and address being known to the Editors. To refresh the memories of your readers, the following appeared in your Journal:—

"Correspondent 'BANKER,' complains of the system of judging."

"September 3rd.—Editors notice the imperfect judgment at the Crystal Palace, as well as the chance of falsity."

"September 17th.—Editors state 'It is understood, Mr. Challoner knows the marks of every breeder of Game fowls.'" (Is not this the notion of unfairness?)

"September 24th.—Captain Hornby sees the necessity of more judges at shows generally. Exhibitors see the same."

"October 1st.—Editors notice the fallibility of judges at a rabbit show."

"October 1st.—'FIDELIS' complains of judgment, and Editors back the opinion."

With regard to my plan of the printed form for placing judgment, I cannot at present see the extra expense. Prepaid letters, and stamps enclosed for all reply, would more than pay for this printing.

There would be a little extra trouble to Secretaries in summing up the state of the poll, &c.; but for penning there could be no waste of time. If cards were printed with any two numbers, viz.:—(The Secretary under present plan registers the number he sends I presume.) Take down a register of the same, cut the card through the centre; keep one for the exhibitor which he sends to him, the other for the show he keeps, register the cards thus:—No. 9 sent to exhibitor, No. 14 for the pen, or *vice versa*. When the basket comes with the fowls, &c., he turns to his register and finds No. 9 card is sent to the exhibitor, and is returned with the basket, and finds corresponding No. 14 is on the pen. This, [illegible]ly, is not much trouble.

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Emoluments I will not now dwell upon. Suffice it to say I think the Birmingham plan should, if there is anything like management, pay its judges (arbitrators only), secretary, and servants in a proper manner—in fact, I think the 21*s*. a shade too high, when one could only send a single pen. In conclusion, allow me again to impress upon all connected, or to whom my letters may apply, that my intention is not to be disrespectful in my [illegible]rdings, nor to thrust my notions down peoples' [illegible] allibl[illegible]

WORCESTERSHIRE POULTRY AND PIGEON SHOW.—OCTOBER 8th, 9th, AND 10th.

THERE are, indeed, but few towns in the kingdom that possess so suitable a building for the purposes of holding a poultry exhibition as Worcester, the Corn Exchange being not only very roomy but one of the most equally-lighted buildings in which we have as yet seen a show of this description placed before the public. The Committee, too, are very indefatigable; and it is, therefore, a natural result that this Meeting is commonly admitted as being one of the most interesting to poultry breeders of any of our autumnal gatherings; a feature greatly strengthened by the fact that the successes gained at the Worcester Show are generally considered as affording a pretty conclusive idea of the relative strength of most of our principal poultry-yards in the fast approaching competitions of Bingley Hall and the Crystal Palace. For these particular reasons it is always regarded with both special interest and enthusiasm by those who wish to obtain the earliest information as to the probable competition at these our two largest poultry exhibitions. We will add no more than that the arrangements throughout did every credit to the Committee.

In the first-class, Black-breasted Red *Game*, the display was a good one; Mr. Horton, of Worcester, after a close competition, holding good the credit of the locality with a very superior pen. The Hon. W. W. Vernon's birds are also well deserving of especial mention. In class 2, Brown-breasted Reds, Mr. J. B. Chune, of Coalbrookdale, took precedence with a capital pen; and one that, if we are not much mistaken, will show to even greater advantage when they become adult. Mr. Edwards, of Nantwich, was an exhibitor, who here ran in easily for the second prize. Mr. Corles, of Worcester, and Mr. Fletcher, of Manchester, stood very closely for the Duckwinged Game prizes. In the class for any other colour in Game fowls, Mr. Fletcher again took even a higher position with a pen of Blacks, Mr. Chune showing some excellent Red Piles for the second premium. In *Spanish*, Mr. Rodbard took the premiums without any competition, but with capital birds. The Grey *Dorking* class was undoubtedly one of the most excellent in the Show. In this variety the Hon. W. Vernon exhibited a pen difficult to surpass anywhere, whilst the birds shown by H. Garrard, Esq., were but triflingly inferior; Mrs. Pettat's third-prize birds were also very good. In the *Cochin* classes, the best represented of any variety was undoubtedly the Partridge-coloured ones; the White ones were also most commendable. The *Hamburghs* of all varieties were capital, except the Golden-spangled ones, of which breed only a single pen was entered, and even that barely good enough to take a second premium. All the winning pens of *Polands* were very superior—indeed, much better than commonly met with; two or more pens, however, were completely thrown out by the folly of their owners showing a humped-back bird. In every such case defeat is certain.

The *Geese*, and still more especially the *Turkey poults*, were first-rate.

In Sebright *Bantams*, this season, the Worcester Show has far exceeded any we have attended. Messrs. Leno, Bayly, Cruwys, Peters, Hodson, and Everett all showed capital pens; and, possibly, even yet the Sebrights may assume as important a position as they were accustomed to do in past years, when they were the most attractive feature to general visitors on account of their peculiar beauty of plumage and general character.

The weather was most auspicious, and the attendance highly respectable.

(*From another Reporter.*)

The "faithful city" always supplies a treat to amateurs, and the present Exhibition was no exception to the rule. The locality has been and remains celebrated in poultry annals. In the earliest days of the pursuit there were celebrated breeders of Game—Messrs. France and Horton. Mrs. Herbert connected it with White Cochins; Mr. Archer first with Silver-pencilled Hamburghs, then with Game; Mr. Wakefield with Dorkings, and Col. Clowes with Polands. There are thus all the outlines of the classes on the spot, and fuglemen of no mean order. They have not remained at home, but they are heard of at Birmingham, Liverpool, the Crystal Palace, and other places where the *elite* mo[illegible] to congregate. Worcester also possesses one thing, the want of which has hindered many shows and discouraged [illegible] some of us who saw the beginning of the [illegible] difficulties [illegible] the pioneers of it.

Lofts and yards were set round with pens; while the stalls of stables, where once coach horses were located, now received coverings of wire, and accepted pens of Turkeys and Geese as tenants. Nothing of the kind is necessary at Worcester. The Corn Exchange supplies all that can be wished for. It is roomy, lofty, light, and well ventilated.

We have seldom seen a prettier *coup d'œil* than met us on entering the Exchange Tuesday last. Turner's pens were used, and the different shades visible to the eye, as it took in the five or six rows that filled the place, each surmounted by the varied hues of the Pigeons made a sort of animated kaleidescope. We noticed the condition of the birds left nothing to desire; and we did not observe one sickly one. This was a pleasing exception to some of the exhibitions we have had to report.

The lists opened with *Game*, a good and numerous entry of Black-breasted Reds, most of the celebrities being represented. Worcester held its own, and Mr. Horton was first, the Hon. W. Vernon second. The Brown-breasted Reds were not as good as their predecessors, and even the successful call for no especial mention. The Duckwings and other varieties were not above the average. Exhibitors at this Show seemed to have expended all their energies in the first class. In the Variety class there were two pens disqualified by having crooked birds in them. *Dorkings* were a large and capital entry; many of our best yards were competitors, and the successful names will afford an insight into the merits of the class—the Hon. W. Vernon was the first, Mr. Garrard second, and Mrs. Pettat third. All the merits and properties that go to make up good Dorkings might be freely met with in this class, and we were glad to observe the birds were not fatted for competition.

There was but one class for this breed, and all, therefore, brought their best into it. If it can be considered an open list, where colour could pit itself against the other properties that go to make up a prize pen, colour had the worst of it. The Silver Greys did not get beyond high commendations.

Spanish were weak in numbers. Mr. Rodbard was the successful exhibitor.

Cochin-Chinas were all good classes in every respect. Miss Viola Musgrove had the honour of taking the first prize for Buff, followed by Mr. Bates, and achieving the proud distinction of defeating Messrs. Tomlinson and Cattell. Good, however, as the Buffs were, their Grouse and Partridge brethren were better, and the beautiful pen with which Miss Musgrove won at the Crystal Palace in August, and which was claimed by Mr. Tudman, here repeated for the third or fourth time since the purchase the exploit of easily distancing all competitors, gaining not only the first prize, but a beautiful china vase offered by Mr. Kerr, of the celebrated Porcelain Works, for the best pen of Cochins exhibited. The Whites also challenge our encomiums, and deserve them. We should grant them more readily if some of them were not so extravagantly vulture-hocked. We were delighted to see our old friend Mrs. Herbert first, but rather hard run by Mr. Chase.

Golden-pencilled *Hamburghs* were very good, and Messrs. Nuttall and Munn deserved their prizes, but they were not equal to the Silver. The first-prize pen of these birds was very beautiful, and those belonging to Messrs. Pierce and Griffith were also meritorious. We can say nothing in favour of the Golden-spangled that were shown, and the first prize was withheld; but the Silvers made amends, producing a class worthy of praise in every respect. Even Mrs. Pettat was obliged for once to be second, and to succumb to Lady Julia Cornwallis. She revenged herself by taking both the prizes for Golden *Polands*. Mr. Adkins seemed to have resumed the place he held years ago at the head of the Silvers. He was closely pressed by Colonel Clowes.

The "distinct varieties" were Brahmas, White Polands, Silkies, Andalusians, Black Polands, Ptarmigan, and cross-breds.

The *Turkeys* were excellent, and brought out a new exhibitor in Mr. Cattell. Had there been more prizes, Messrs. Crawshay and Milward would have deserved them.

Mr. Fowler took all the prizes for *Geese* and Aylesbury *Ducks*. Mr. James Holme took both prizes for Rouens. There was very good competition in the class for any other Ducks. Mr. H. D. Bayley deservedly won with beautiful Brown Calls, and Mr. Martin with Buenos Ayrean. These last were numerous, but exhibitors must bear in mind that with these birds large size is a fault.

We seldom recollect seeing a better show of *Bantams*. Every class was well represented. We may speak positively as regards the Silver Sebrights, it is long since we have seen them so good or so numerous. Mr. H. D. Bayley won two first and one second prize for cock and two hens, and both the prizes for Single Cocks. Mr. Heath's Black-breasted; Mr. Camm's, Miss Musgrove's, and Mr. Leno's Silvers all deserve especial notice. The prizes for *Single Game Cocks* were taken by Messrs. Horton and Edward Archer.

Everything was well conducted, the birds were carefully tended and sent off, and Mr. John Holland was always at his post.

Game (Black-breasted Reds).—First, H. Horton, St. John's Worcester. Second, Hon. W. W. Vernon, Ranton Abbey, Stafford. Highly Commended, J. R. Rodbard, Aldwick Court, Wrington, near Bristol. Commended, E. Archer, Malvern; G. S. Cruwys, Morchard Court, Tiverton, Devon.

Game (Brown-breasted Reds).—First, J. B. Chune, Coalbrookdale. Second, S. Edwards, Beam Street, Old Red Cow, Nantwich, Cheshire. Commended, E. Archer, Malvern.

Game (Duckwings and other Greys and Blues).—First, W. Corles, the Grange, St. John's, Worcester. Second, J. Fletcher, Stone Clough, near Manchester. Commended, J. B. Chune, Coalbrookdale.

Game (any other variety).—First, J. Fletcher, Stone Clough, Manchester (Black). Second, J. B. Chune, Coalbrookdale (Piles). Highly Commended, J. B. Chune (Black); H. Corbett, Tallow Hill, Worcester.

Dorkings (Coloured).—First, Hon. W. W. Vernon, Ranton Abbey, Stafford. Second, E. H. Garrard, Salford Vicarage, near Evesham. Third, Mrs. Pettat, Ashe Rectory, Basingstoke, Hampshire. Highly Commended, Lady J. Cornwallis, Linton Park, Staplehurst; E. H. Garrard; Rev. F. J. Newton, Kirby-in-Cleveland, Stokesley, Yorkshire; H. W. B. Berwick, Helmsley, Yorkshire; W. Dolby, Syston Old Hall, Grantham. Commended, Lady J. Cornwallis; E. Tudman, Ash Grove, Whitchurch, Salop.

Spanish.—First and Second, J. R. Rodbard, Aldwick Court, Wrington, near Bristol.

Cochin-China (Cinnamon and Buff).—First, Miss V. W. Musgrove, West Tower, Aughton, near Ormskirk. Second, H. Bates, Harbourne Heath Cottage, Edgbaston, Birmingham. Commended, H. Tomlinson, Balsall Heath Road, Birmingham; J. Cattell, Birmingham.

Cochin-China (Partridge and Grouse).—First, E. Tudman, Ash Grove, Whitchurch, Salop. Second, J. B. Walthew, Bircles, Brow Aughton, Ormskirk. Highly Commended, Mrs. S. R. Herbert, Powick, near Worcester. Commended, P. Cartwright, Oswestry.

Cochin-China (Any other variety).—First, Mrs. S. R. Herbert, Powick, near Worcester. Second, R. Chase, Moseley Road, Birmingham. Highly Commended, Mrs. S. R. Herbert. Commended, W. Dawson, Hopton Mirfield, Yorkshire; R. Chase.

Hamburghs (Golden-pencilled).—First, A. Nuttall, New Church, near Manchester. Second, J. Munn, Stacksteads, near Manchester.

Hamburghs (Silver-pencilled).—First, J. Martin, Mildenham Mill, Claines, Worcester. Second, W. Pierce, Hartford, Northwich. Highly Commended, G. Griffiths, Church Street, Worcester.

Hamburgh (Golden-spangled).—Prize, S. Hyde, Taunton Hall, Ashton-under-Lyne.

Hamburgh (Silver-spangled).—First, Lady J. Cornwallis, Linton Park, Staplehurst. Second, Mrs. Pettat, Ashe Rectory, Basingstoke. Highly Commended, P. Joshua, Perret's Brook, near Cirencester; J. Fielding, New Church, near Manchester.

Polands (Golden).—First and Second, Mrs. Pettat, Ashe Rectory, Basingstoke.

Polands (Silver).—First, G. C. Adkins, the Lightwoods, near Birmingham. Second, Lieut.-Col. Clowes, Froxmere Court, Crowle. Highly Commended, Mrs. Blay, the Poplars, Gregory's Bank, Worcester.

Polands (Black with White Crests).—Prize, T. P. Edwards, Lyndhurst, Hants.

Any Distinct Variety not Included in the above Classes.—First, J. K. Fowler, Prebendal Farm, Aylesbury. Second, Lieut.-Col. Clowes, Froxmere Court, Crowle. Commended, Mrs. Blay, Worcester.

Turkey Poults.—First, J. Cattell, Birmingham. Second, Master E. Guy, Eaton, near Grantham. Highly Commended, Miss L. Crawshay, Caversham Park, Reading; Miss J. Milward, Newton St. Loe, near Bath.

Goslings.—Prize, J. K. Fowler, Prebendal Farm, Aylesbury.

Ducklings (Aylesbury).—First and Second, J. K. Fowler, Prebendal Farm, Aylesbury.

Ducklings (Rouen).—First and Second, J. Holme, Knowsley, near Prescot. Highly Commended, J. K. Fowler, Prebendal Farm, Aylesbury; W. Joshua.

Ducklings (any other variety).—First, T. H. D. Bayley, Ickwell House, Biggleswade, Beds. Second, J. Martin, Claines, Worcester. Highly Commended, Mrs. Beardmore, Uplands, near Fareham, Hants; W. Joshua.

Bantams (Game, Black-breasted, and other Reds).—First, T. H. D. Bayley, Ickwell House, near Biggleswade, Beds. Second, J. Heath, Nantwich, Cheshire. Highly Commended, J. Camm, Farnsfield, Southwell, Notts.

Bantams (Game, any other colour). First, J. Camm. Second, Miss V. W. Musgrove.

Bantams (Gold and Silver-laced).—First, M. Leno, jun., the Pheasantry, Markyate Street, Herts. Second, T. H. D. Bayley. Highly Commended, Rev. G. F. Hodson, North Petherton, near Bridgwater, Somerset; G. C. Peters; G. S. Cruwys, Tiverton.

Bantams (Black or White).—First, T. H. D. Bayley. Second, G. S. Cruwys. Highly Commended, G. Peters. Commended, E. Hutton, Pudsey, near Leeds.

SWEEPSTAKES.

Game Cock Class.—First, H. Horton, Worcester. Second, E. Archer, Malvern.

Game Bantam Cock.—First and Second, T. H. D. Bayley. Highly Commended, J. Camm.

Pigeons.—*Powters* (any colour).—Prize, H. Child, jun. *Carriers*.—First, withheld. Second, A. S. Sylvester, Birmingham. *Almond Tumblers*.—First, J. Percivall, Rye Lane, Peckham. Second, G. C. Adkins, Lightwoods, near Birmingham. *Mottled or other Tumblers*.—Prize, J. Percivall. Commended, F. Esquilant, 346, Oxford Street, London. *Balds* or *Beards*. Prize, F. Esquilant. Commended, J. W. Edge, Birmingham; H. Morris, Forest Hill, Kent. *Owls* (Silver or Blue).—Prize, J. W. Edge. Commended, E. A. Hargrove, Handsworth, Birmingham. *Owls* (any other colour).—Prize, J. Percivall. Highly Commended, W. Squire, Hanwell, Middlesex.

Barbs (any colour).—First, E. A. Hargrove. Second, A. S. Sylvester. Commended, H. Morris. *Fantails* (White).—First, J. W. Edge. Commended, Miss J. Milward; G. C. Adkins. *Nuns* (any colour).—First, withheld. Second, J. W. Edge. *Trumpeters.*—Prize, J. Percivall, *Turbits.*—First, G. C. Adkins. Second, F. R. Else. Commended, J. Percivall. (Very nice class). *Jacobins.*—First, F. Esquilant. Second, withheld. *Runts.*—Prize, G. C. Adkins. *Antwerps.*—Prize, H. Yardley. *Any New or Deserving Variety.*—Prize, E. A. Hargrove.

Mr. John Baily, of London, and Mr. Edward Hewitt, of Birmingham, were the Judges.

ABOUT EGGS.

An egg of the average size weighs 1000 grains, or one-seventh of a pound. Three-fourths of its weight are water. One-seventh is albumen, a highly nutritious substance, resembling lean meat in its composition, and, therefore, adapted to produce strength of muscles when consumed as food. One-tenth of the weight of the egg is fat or oil, which is useful to supply carbon for respiration, and heating the body, and, therefore, especially valuable for eating in hot or cold weather. The yolk contains some sulphur and phosphorus compounds, the latter affording material for the bones (and brain). The shell is chiefly carbonate of lime, similar in composition to marble or limestone. The shell is porous, and admits air for the chicken before it breaks out. Of the entire egg the shell weighs about one-tenth; the yolk, three-tenths; the white, or transparent portion, six-tenths. The composition of an egg is quite similar to that of a piece of good fat beefsteak with the bulk of the loose fat, or tallow, trimmed off: eggs are, therefore, nutritious food. Seven eggs, weighing a pound, are nearly as valuable for food as a pound of good meat, and they generally cost much less. During the past few months seven eggs have cost only 7 cents at retail in our market; while a pound of sirloin beef has cost 14 to 16 cents, and a good steak from the round, 12 to 14 cents per pound—being two to one in favour of eggs.

In cooking eggs most families boil or fry them hard. This renders them bad to digest, unless they are masticated very fine, and this is seldom done in rapid eating. They are every way better if soft boiled, and, after a little practice in eating them thus, a hard-boiled egg is comparatively dry and tasteless. An egg placed in boiling water just three minutes, or, if a large one, three minutes and a quarter to three minutes and a half, is abundantly cooked. After removing from the water, the eggs need to stand a few minutes to heat through to the centre. After becoming a little accustomed to them, eaten with the addition of a little salt and pepper, or other condiment, eggs thus cooked are palatable as butter, instead of requiring to be covered with butter.

Preserving Eggs.—As above stated the shells are porous, and the water of the egg is constantly evaporating, and air entering to take its place. After a time, decay commences. It will readily be seen that stopping the pores of the shell will tend to preserve the contents in their natural state. This may be done by dipping them quickly in melted tallow, or coating them with sweet oil, or a solution of gum, or varnish. Milk of lime—that is, fresh-slaked lime mixed with water to a milky consistency, fills up the pores pretty well. Thus coated, they need only to be placed in a cool place of uniform temperature. A packing of chaff, bran, salt, ashes, charcoal, dry sawdust, or any similar porous material, preserves the uniformity of temperature by means of the nonconducting air confined in the spaces. Perhaps there is no simpler way of keeping eggs than to dip them in melted tallow, pack them in dry chaff, and store them in a cool, dry cellar.—(*American Agriculturist.*)

Combat between a Hen and an Adder.—The *Ayr Advertiser* notices a battle between a hen and an adder, near the village [illegible] Old Minnighoff. From the manner in which she jumped among the long grass on the bank we at first concluded that chuckie was tethered. Not so, however, for on making a sudden [illegible] down, she suddenly lifted and threw about a yard high, [illegible]t at first sight appeared to be a worm of 10 inches or [illegible]2 inches in length. This she continued to do half a dozen times in succession with the utmost rapidity, until it finally fell over the bank, when we at once perceived the reptile of chuckie's attention was no other than an adder. Having gazed a moment [illegible] the bank after it, [illegible] turned round about and uttered a few [illegible]torious chucks, wh[illegible] our further astonishment, there [illegible] and another above the grass, until a whole brood of chickens appeared and clustered around her, of whose existence we were not aware during the combat; but, doubtless it was for their protection that chuckie had engaged in so dangerous a duel.

A BROOD OF DRAKES.

About five months ago I purchased a sitting of eggs from prize Aylesbury Ducks. Seven hatched to my great delight, thinking, of course, I had got a breed of them at last. I took every possible care of them, giving them all kinds of nutritious food to make them very fine ones, which I have pleasure in saying they are. But what do you think I have for my trouble, not to say my expense? I have the pleasure, after five months' careful attention, of finding that they are every one *drakes!* Now, is it possible by examining eggs to foretel the gender of the young one? I feel very much inclined to believe it is. Perhaps it is an omen of something very bad going to happen to me, as a friend of mine told me it was a sign that I should die a bachelor. I killed off all my old stock to make room for these eight pure-bred gentlemen, which now constitute the whole of my stock for next year's breeding.—Drake.

[There is no mode of foretelling the sex of the future product of an egg; nor do we think a brood of drakes prophetic of bachelorship; at all events we know a gentleman who had a brood all Ducks, yet he has no chance of having more than one wife. Keep one of your drakes, and buy three pure Aylesbury Ducks to form his harem. The progeny will be finer than if you bred from Ducks of the same brood.]

THE QUEEN BEE.

DOES A VIRGIN QUEEN BREED DRONES.

Lieut.-Col. Newman may well hesitate at receiving the doctrine of true parthenogenesis in the honey bee, which, as I have before stated, is a phenomenon of so extraordinary a character as to require the most conclusive evidence before it can be recognised as an undoubted fact. At the same time, I am quite at a loss to perceive what argument he seeks to draw from analogy with the natural history of humble bees. Although circumstances have occurred in my own apiary which, when taken in conjunction with the testimony of others, leave no doubt on my mind they are, as I have already stated, so far short of absolute proof as scarcely to be admissible as arguments. I can, therefore, only refer the gallant Colonel to the evidence of Siebold, Dzierzon, Berlepsch, and Langstroth, recommending him at the same time to satisfy himself by actual experiment of the truth or falsehood of the modern theory.

The present is a very able period for repeating the experiment of Berlepsch by rearing a few queens at a season when no drones exist to fecundate them. Assurance might at the same time be rendered doubly sure by clipping their wings as soon as they issue from their cells. If under these conditions the young queens turn out drone-breeders in the spring, I fancy Colonel Newman will have little reason for further doubt.

I beg to assure your respected correspondent that I am a very ardent admirer of the immortal Huber, and esteem his work as a most wonderful and valuable production. At the same time, I am far from believing that it has by any means exhausted the subject on which it treats, and feel assured that its illustrious author, if now living, would rejoice to find it a stepping-stone to further discoveries in that science, which he has done so much to advance.

I happen, also to be well acquainted with Mr. Huish's book, and rate both it and its author at their true value. Whilst thanking Col. Newman for his advice to peruse it, will he excuse my hinting a suspicion that a slight spice of irony lurks under that strong recommendation? I may be permitted to ask if he can point out any one passage of my writing which warrants his insinuation that I have anything to learn from a source so utterly contemptible? and in my turn recommend him by no means to retrograde fifty years, but attentively to peruse the modern and trustworthy authorities whose names I have already mentioned.

In conclusion, I venture with all due deference to the gallant Colonel to controvert one of his very positive but decidedly incorrect assertions. I have repeatedly proved that the absence [illegible] means demonstrates the existence of either royal embryos or young queens within the hive at the time.—A Devonshire Bee-keeper.

P.S.—I fancy Colonel Newman will be disappointed in the hope he professes to entertain of soon perusing detailed particulars of the quality and quantity of honey taken from flourishing Ligurian stocks. I have already given the results of my own experience, which I consider most favourable; and Messrs. Neighbour can show him two boxes of honey collected by my Ligurians which may well satisfy him in respect of quality. But I imagine the fortunate possessors of strong Italian stocks will have been, like myself, far more anxious to propagate the species as rapidly as possible, than to test for the present their honey-producing qualities.

VENTILATING OBSERVATORY-HIVES.

To assist your correspondent, "A. W.," in getting rid of the condensation in his observatory-hive, complained of at page 472 of the last volume, I may be permitted to describe the plan I hit upon when similarly situated. He informed us previously of having rendered his hives complete by adopting the Woodbury-bar, further improved by grooves being run in its sides to work slides; thus dispensing with the clumsy crown-board.

Assuming his observatory so provided, by cutting up fine India matting into strips, the same length and breadth as the slides, one end tacked to the under side of a little end bit of slide—say 1½ inch long, the other being run into the grooves, after the wooden slide has been withdrawn, acts as a handle to work with.

On adopting this simple device he will find the ventilation more in keeping with the perfection attained in straw hives, and the prosperity of his Ligurians materially promoted.

I previously alluded to this at page 90, but from a typographical error my meaning was somewhat obscured.—A Renfrewshire Bee-keeper.

YOUNG BEES EXPELLED FROM HIVES.

I have to thank you for your editorial remarks, as well as Mr. Fox, and "A North Staffordshire Bee-keeper," for their kindly co-operation in endeavouring to solve the enigma of the expelled bees.

So far as my comparatively limited experience went, such a proceeding was quite inexplicable. I recollect the end of May was a twelvemonth of a good hive throwing out half-formed drone-brood. I was puzzled at first, but on feeding liberally that difficulty was removed. I also witnessed well on in July of this year, a couple of stocks that long hung out threatening swarming, cast forth large quantities of similar drone-brood. This, however, I looked upon as the signal they had determined not to swarm, and that this measure was an exemplification of their usual wonderful foresight; but when my best-stored hive, after throwing a couple of swarms, too, commenced the wholesale expulsion of living worker bees, their very desideratum, I must confess I was as much nonplussed to account for the phenomenon as chagrined at it; and with all the light that has subsequently been thrown upon the subject, I fear I must own I am yet in the dark. This colony has expelled as many young bees as would form a small swarm. The case of last season and the other two this were hardly worth mentioning in comparison. The evil by degrees slackened till a fortnight since it totally terminated. I am, therefore, now unable to satisfy Mr. Fox as to the imperfection of the wings, but my own impression at the time was, the wings were as far advanced in proportion as the rest of their bodies. Their not attempting to fly I felt disposed to ascribe more to general debility than to any particular shortcoming in these organs—in a word that they had issued prematurely. That good apiarian is perfectly correct as to external heat having nothing to do with the mischief. We had, as he remarks, but a low temperature this summer besides little sunshine, and, in addition, this particular hive was well shaded by a thick straw thatch.

The only satisfactory conclusion I have come to is, the long continuance of uncongenial weather was the cause; but how it operated to produce the effect I am still at a loss to conceive, unless I fall back on my original surmise, that the bees being imprisoned within the hive from the above cause, although they had plenty of honey, were unable to carry in pollen in anything like the quantity requisite to keep pace with the rapid breeding of a vigorous young queen; and, consequently, from a deficiency of this most essential condiment in the early age, lacked constitutional stamina, and emerged in an enfeebled condition, or owing to the same bad weather the whole inmates through confinement were converted into involuntary nurses on the brood, and by the high temperature thereon the youngsters issued prematurely.

I cannot coincide with the supposition that the bees are in any way diseased (the other two hives are in no way related). On the contrary, the existing adult population are numerous and very vigorous; indeed, ever since their establishment last season (a couple of weak colonies in Stewarton-boxes then joined), they have displayed an irascibility and blood-thirstiness extending to all and sundry, as well as their own offspring, I have never seen equalled, no one daring to pass within a yard or two without molestation. Indeed I scrawl these lines under the disadvantage of having one eye about closed—the effect of a sortie when recently passing their octagon stronghold.

It may be proper to mention, I ascribe the cause to the long continuance of bad weather, from witnessing the same peculiarity during such weather last season as well as this. The other two hives also proving it was not attributable to anything individually defective in the worst, but only its greater extent, resulting from superior strength in population and store, exerting their wonted stimulating effects on a vigorous young queen. I have also heard of a similar bad case with a neighbour. The ultimate fate of his hive as well as my own shall be duly reported by—A Perplexed Young Bee-keeper.

DRONE PRODUCTION BY OLD QUEENS.

Confirmatory of what "A Devonshire Bee-keeper" remarks at page 492 in your last volume, on old queens returning to the drone-laying condition of virgins, I may remark, the first colony of bees I possessed was a prime swarm in a common straw hive, consequently a queen of the previous year at least. Although the hive was weighty, for the three following good seasons it stood, anxiously expected and carefully watched, but gave no swarm. I recollect, my hopes were greatly buoyed up by its strength in drones, which each season increased till the last, when they exceeded all due proportion; so, being thoroughly sickened, I fumigated the hive, caught and killed the venerable lady, adding her subjects to another colony.—A Renfrewshire Bee-keeper.

HOW I BECAME AN OXFORDSHIRE BEE-KEEPER.

(*Continued from page* 432.)

Now for the details of my present swarming season, and towards a quicker comprehension of my ways and means, I will tally my hives, so that my readers may follow their offspring without any very great tax upon their memories. I will specify my four hives as age 6, age 3, age 2, age 1, each figure corresponding to its length of years respectively. Should I go from home in the swarming season, I take care to leave every requisite that may be wanted for that end in proper order, and to intimate to my friend and pupil (in bee-keeping) how I wish swarm so-and-so to be placed, premising so and so should happen. And it happened this year that I was very delightfully occupied in the new gardens of the Royal Horticultural Society at Kensington Gore, on the 5th of June, the day of their opening, when age 3 and age 2 gave me two "prime swarms." Age 3 issued first, and settled on a row of peas (Sangster's No. 1.) Age 2 then followed suit, and flew and joined them, which saved Mr. Morris that operation in the evening. 12th, a cast issued from age 3, and one also from age 2; they also settled in the peas, from whence I hived them, and they apparently took to their new quarters comfortably, though both casts harked back again to their parental homes within the period of two hours. When I was a watchmaker and working-jeweller in Knightsbridge, years ago, I well remember a tall man, with a stentorian voice, who cried his "shrimps as large as prawns;" but my casts really are as large as common swarms. Loud trumpeting in the above hives in the evening.

June 13th, a swarm issued from age 1, and settled in the peas.

The two casts of the previous day also issued again: the one from age 3 settled in the peas, and the other seemed bent upon a neighbour's garden; but I appeared in the nick of time to hail them with "Boys, boys, b-o-o-o-o-ys!" when they returned and settled in a gooseberry bush. After hiving the cast from age 3, took a fancy to fly and unite themselves to the cast from age 2, which was exactly what I wanted them to do, and I felt much obliged. At half-past nine P.M., I placed the swarm in its new station, and joined the two casts to it; and the bees had all amicably ascended the hive by eleven o'clock, so I placed them at once upon their stand, which relieved me from the necessity of arising by daybreak the next morning to do so.

My method of uniting bees is as follows:—A few hours previously, and from the hive which I intend to add to its numbers, I take off the pan and disconnect the propolis from the board by forcing the hive a little out of the position which it occupies. Then, just at the dusk of evening, I spread a cloth by its side upon the walk, and at about a foot apart, extend two three-quarters-of-an-inch-square sticks, about 2 feet long, upon it. Then carefully bring the hive with the new swarm, or cast, quietly set it upon the sticks, and strike it on the crown rather smartly with a moderate-sized shillaleh; then catch up the hive, instantly, and clapper it quickly three or four times between one's hands, and the concussions will project every bee upon the cloth. Then, expeditiously, and with main strength, place the hive from the stand over them, when the sticks will prevent it from crushing the bees. Waft what bees remain upon the bee-board with the wing on to the cloth, bring the four corners of the latter on to the top of the hive, and secure them there with a piece of brick, or a stone; and presently, the uproar will prove tremendous. Place the pan over the bee-board on the stand, and in an hour or so's time spread out the corners of the cloth again, when, should the bees have all ascended the hive, it may be placed on its stand at once, though it rarely happens that they will have achieved so much when they are united to a hive which has been previously long occupied and stored: therefore, arise and adjust it in the morning, just at the break of day.

In early summer unitings few dead bees will have to be deplored, in autumn joins with old bees a more fatal battle-field may be the result, though I have never had a case to cause me much affliction through pangs of conscience in that respect; but then I allow the new subjects to gorge themselves to repletion before I enforce the encounter, of which more anon. A dead queen is sure to be the result; and in the event of uniting a cast in summer, sometimes two or three, and three times during my experience. As regards the latter, instead of bringing the cast to the stock, I have been obligated to take the stock to the cast—for this reason: frequently a plural number of queens will issue with a cast, and when that happens latish in the day, there will not be time sufficient allowed for them to settle their little differences, as to which is to retain possession of the Napæan belt. There will be one queen, perhaps, with a complement of subjects congregated outside the hive, another inside, and another on the surface of the cloth. In those transactions the plan is to bring the stock-hive on its board to the spot, eject the divided community on to the cloth, shillalehwise, and place the stock-hive on the bricks over them, and there will soon be heard trumpeting sufficient to compete with half-a-dozen children at a fair. Early in the morning place the hive upon its board upon the spot, and bear it off to its stand with its new colonial increase. An extended battle-field will be found to be the result on these occasions amongst the commonalty, more or less, and I have by me now three dead queens which met with their death last year in an encounter, similar, amongst numerous dead subjects. I have had no fighting at all amongst the uniting workers this season at present, neither have I experienced one wet night whilst performing the amalgamations. Last year I was very unfortunate in this respect; but I bethought me to take the wheelbarrow, with the cloth spread over it, to dash the bees on to it, place the stock-hive into it, with part of an old door over all to [illegible] the wet slantingly off from it, and I found the plan [illegible]. UPWARDS AND [illegible]

[illegible] BEE SE[illegible] ROXBURGHSHIRE.

The in-bringing [illegible] is just over, [illegible] ver[illegible] inequality o[illegible] noticeable among hives that ha[illegible] [illegible] whole, has been a bad one for bees. They had only a fair beginning in the making of flower-honey when the rain commenced, which sealed over the honey-producing flowers. Bees generally begin to lay up flower-honey about the middle of June, and at the beginning of July the weather broke up, and it continued wet, more or less, until the best of the bee season was past. Many hives recruited much on the heather, which this year has been in fine bloom on the border moorlands. The honey is scarcely so fine as in years when flowers are less rain-closed and bee-proof. The honey yield is also much below an average in quantity. Some splendid hives have been brought home, and many miserable ones. The heaviest we have any knowledge of weighed 58 lbs. and some of the accompanying hives to this weighed so low as 8 lbs. and 10 lbs. Many hives are from 15 lbs. to 25 lbs. A hive, it is considered among "bee-men," can winter if 30 lbs. in weight, but those below that require food. The number of bee-keepers on the borders is great, and many of them have from ten to thirty skeps. We know some with even more. No hobby seems to take firmer root than that of bee-keeping, and it is a hobby that gives daily anxiety or pleasure, and one that occasionally leaves a sting behind. Whole hives of bees, by the way, found their way into some shops in the towns. We know a draper's shop into which two hives came, they having apparently lost their queen. The extra number of bees about shops in general this year plainly shows that the season has been a poor one for them.—(*Scottish Farmer.*)

SONG OF THE BEE.

By Hannah F. Gould.

We watch for the light of the moon to break
  And colour the eastern sky,
With its blended hues of saffron and lake,
Then say to each other, "Awake! Awake!
For our winter's honey is all to make,
  And our winter bread for a long supply."

And off we hie to the hill and the dell,
  To the field, to the meadow, and bower;
We love in the columbine's horn to dwell.
To dip in the lily with snow-white bell,
To search the balm in its odorous cell,
  The mint and the rosemary flower.

We seek the bloom of the eglantine,
  Of the pointed thistle and briar;
And follow the steps of the wandering vine,
Whether it trail on the earth supine,
Or round the aspiring tree-top twine,
  And reach for a state still higher.

While each, on the good of her sisters bent,
  Is busy and cares for all;
We hope for an evening with hearts content,
For the winter of life without lament
That summer is gone, its hours misspent,
  And the harvest of life is past recall.

—(*Prairie Farmer.*)

OUR LETTER BOX.

More Deaths of Birds Shown at Sheffield.—*J. H. K.* exhibited Game fowls, adults and chickens. A day or two after their return all the chickens died, and one hen.

Supply of Eggs (*F. A. C.*).—Six Cochin-China pullets for winter supply, and six Hamburghs for summer, will keep you well supplied.

Claws of Dorking Cockerel (*J. F. Newton*).—The double nail on the claw of the Dorking cock will not disqualify him; nor will the claw placed forward as you describe, unless it be so placed as to appear a deformity.

Poultry Unable to Stand (*All Anxiety*).—Your birds from your description are cramped. If the floor of their roosting-house be brick or stone, that will in some measure account for it. Put the birds on straw or dry gravel; keep them warm, and well fed on meal and stimulating food, but no rice or whole corn.

Aylesbury Ducks' Bills (*Constant Subscriber*).—As their bills are too yellow, let them have grit and chalk in their water. Keep them carefully from all pond or discoloured water, or water with iron in it. Let the Ducks out in meadows when cold dew or white frost is on the grass.

Whole-feathered Tumbler Pigeons (*Philo*).—You might enter the pair of whole-feathered Tumblers in the class for "any other variety" at Birmingham. They are clearly not eligible for either of the Tumbler classes, as they are for Almonds and Mottled. There would be no chance of their being disqualified in the "variety" class.

Pigeon's Eyes Inflamed (*T. Hussey*).—It is almost impossible to tell the cause of the disease in the eyes of your correspondent's Pigeon. Possibly it may be simply a cold or inflammation, in which case give tonics, and bathe the eyes with a cooling lotion; or it may be that the bird is suffering from roup, and the nostrils have become clogged, so that the discharge passes out of the eyes, and consequently inflames them. If such is the case give smith's forge water, or sulphate of iron in its drink; feed on good wholesome food; endeavour to clear the nostrils and remove the obstruction, and bathe the eyes with weak goulard or elder-flower water. A purge or two of butter, fresh air, and a run in the garden, may greatly improve the birds' general health.—B. P. B.

Work on Canaries (*J. Phillips*).—There is no such work yet published; [illegible]

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	OCTOBER 22—28, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
22	Tu	Linum trigynum.	30.032—29.962	61—40	S.	—	38 a 6	51 af 4	24 6	18	15 28	295
23	W	Arbutus longifolia.	30.041—30.029	62—50	S.W.	·04	40 6	49 4	14 7	19	15 36	296
24	Th	Phlomis nepetifolia.	30.054—29.963	63—46	S.	·01	42 6	47 4	13 8	20	15 44	297
25	F	Statice mucronata.	30.008—29.990	64—50	S.W.	·04	43 6	45 4	21 9	21	15 51	298
26	S	Jasminum azoricum.	29.931—29.885	62—40	S.W.	·02	45 6	43 4	34 10	☾	15 57	299
27	Sun	22 Sunday after Trinity.	29.903—29.894	61—39	S.	—	47 6	41 4	50 11	23	16 2	300
28	M	St. Simon and St. Jude.	30.016—29.953	67—42	S.	·01	49 6	39 4	morn.	24	16 7	301

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 56.5° and 39.4° respectively. The greatest heat, 78°, occurred on the 21st in 1839; and the lowest cold, 17°, on the 23rd in 1859. During the period 121 days were fine, and on 117 rain fell.

THE BEDDING-OUT AND MIXED BORDER SYSTEMS.

SAY what you will in favour of mixed herbaceous borders, popular opinion, I was almost going to say prejudice, runs high in favour of the bedding-out system: Do not be alarmed, you who cater for multitudinous variety, for I applaud your exertions and enthusiasm, although not a convert to your notions. It is true you have the pleasure of seeing something new in your morning walk all the year round, which the most fastidious opponent to your way of thinking would be obliged to concede was beautiful, interesting, or rare, as the case might be, individually; but collectively the best-arranged herbaceous border seems always clad in half mourning.

"This is all very well this bedding-out system," says an eloquent friend, "grand masses of bloom, a fine field for displaying artistic arrangement; but don't tell me there is this difficulty and that difficulty in mastering that part of your business, for you only want to know the names of about a dozen plants and have plenty of them."

Be this as it may, the bedding-out system is notoriously fashionable, and is more and more fostered every year. The ladies descant upon its beauties, pay a tribute of admiration to a well-arranged parterre, and are ever ready to suggest other colours to harmonise, or other colours to contrast with one another in the various combinations of "ribands," "panels," &c. There is certainly a great increase of labour during the propagating and planting-out seasons too often with scanty appliances, in any point of view you may choose to look upon it; but if it can be done at all, if done well all the better, it is "worth all the money." Depend upon it, once bring it before the tastes of the wealthy and the affluent—there may be, and always are, exceptions; to speak mildly, they will go a certain way to second your requirements. They are compelled to argue it in this way: "We must keep up with the spirit of the age. It is fashionable this massing system, and our friends who have seen our gardens this season, and who have been loud in their praises, would question very much our tastes, if, for the sake of a few pounds annually (and it is not so very much more after all), we were to allow our gardener to retrograde from, rather than to advance with, the style which we all so much admire."

From this hypothesis we may expect that the modern style of gardening is decidedly popular; and not only so, but we expect to see first-class gardening set down for what it is really worth; for it has been, we would with all deference suggest, the habit of late years for the middle classes, more especially the urban populations, who are not so frequently associated with gardeners and gardening, to look upon the profession and the members of it as little better than unskilled labourers: *ergo*, day labourers carry on the work. The scales are gradually loosening from their eyes in proportion as they are privileged to see the various subjects with which the gardener has to deal, and they occasionally jostle against a coterie of the profession who are scarcely less intelligent than they. To all gentlemen who may be inclined to combat the point with me, we say, Go and see for yourselves, and take a lesson from the sensible reply of the Prince Consort at the opening of the Kensington Gardens, where you will find he elevates gardening to a science. Let young gardeners look at this and be stimulated to extra exertions, both in a practical and theoretical point of view; and if they do their duty, the high claim represented by a very high authority will be quite safe in their keeping.

Now, I can imagine a great many disclaimers among your readers as to the wisdom, in their case, of such sweeping laudations in favour of the bedding-out system. I am perfectly aware that the enthusiastic inmates of the cottage, and even a great many of the villa gardens, must have their Phloxes, Pentstemons, Antirrhinums, Dahlias, Hollyhocks, Roses, &c., arranged together in a border, because they have neither means nor space to devote to them in any other manner. We beg to assure them that they are not included among those we would rally round our standard. It is as pleasant for any of us to see their exertion successful in a small way, as it must be to them to feel that their labour has not been spent in vain.

There is quite a revolution in Scotland during these last ten years in the management of the cottage and villa gardens; and so great an advancement is mainly attributable to the local flower shows held almost in all villages of any note. At one or two of these local exhibitions we may state there were much finer spikes of Phloxes and Pentstemons grown and exhibited by the cottager than those exhibited by those gardeners that came forward both at Edinburgh and Glasgow. It is certainly surprising to see the tastes of those humble men and women as displayed in their mixed arrangement before the fronts of their dwellings. But that is not all, I happened to be one among others who awarded a first-class extra prize to an indefatigable cottager who had kept over, without any neutral assistance, Scarlet Geranium Tom Thumb for the last twelve years, and exhibited it this autumn 5 feet across, full of bloom. This shows what can be done with a thermometer, as was the case last December, indicating 11° below zero. Once organise a spirit of rivalry in a district, and you will find the adage true to the letter, "Necessity is the mother of invention." As it is with the peasant, so it is with the peer. Let us show what can be done, and the rest will follow.—Jas. Anderson, *Meadow Bank, Uddingstone.*

A FEW DAYS IN IRELAND.—No. 2.

PHŒNIX PARK.

The far-famed Liffey, as it pours its waters from west to east, divides the fine city of Dublin into two almost equal parts. The noble quays on each side of the river extend to King's Bridge (the eighth bridge), where close at hand on the south side is the splendid terminus to the Great Southern and Western railway, built of hewn granite with its base story in the massive Tuscan, and the upper parts chiefly in the florid Corinthian style. On the north side the quay terminates in Park Gate Street, and a few minutes bring you to the gates of *the* Park, *par excellence*, in the British dominions.

The size of the Park is great, containing as it does 1750 statute acres. The surface is greatly varied and diversified, showing at one place extended level platforms, and at another place deep, picturesque glens and gorges, and elevated mounds and hills. As a whole it is admirably planted, though still leaving room for the exercise of the refinement and thoughtful consideration of the landscape-gardener.

There are fine old trees to be found that have witnessed the days of other times; but in this respect it must yield the palm to the massive grandeur of Kensington, and the hoary dignity of Hampton Court. That grandeur and dignity, however, are becoming associated with the coming decrepitude of age; while in the case of the Phœnix we are almost constantly presented with the ever-growing, luxuriant buoyancy of youth. As respects variety of scene and variety of object, there are few points on which to base either comparison or contrast—the Phœnix has it all its own way.

Almost every kind and variety of deciduous hardy trees have been brought into requisition. In forming the masses and groups during the last generation, the mixed system of planting seems to have been adopted, so that the more quickly-growing kinds should act as nurses to the others. So far, however, as we could judge from a passing inspection, two things have been thoroughly attended to—the thinning has been done in good time, and the work has been so conducted as to leave those trees ultimately that were intended to form the group, so that each of these groups might present a distinct and separate feature when contrasted or compared with its next neighbour. Not but that a tree or two of a different kind might not be left; and of this we noticed frequent examples, and these, if not too numerous, will ever mellow down the hard lines of contrast between groups so planted, and form a sort of connecting link between them. Thus variety may be secured without monotony.

We may be only groping out of the mist as respects this question of variety; but we are not so mistified as not to see that on this subject a great many of our clever friends are yet densely cloud-wreathed. The whole matter requires thorough investigation and study, for we seem to have no settled principle whether the variety wished for has reference to groups of trees or groups of flowers. "What lumpish masses of foliage!" "What glaring unmeaning yards and patches of colour!" "I'll none of them—so thoroughly unnatural." As if it were necessary to imitate Nature either in park scenery or in the more artistic garden. The appealers to Nature should just let Nature alone in her glory, and there are just enough of gardens so left to tell us what they will become. "As for me I will have only clear, distinct colours in contrast, and when you have feasted your eyes on blue Lobelias, orange Calceolarias, purple Verbenas, and Scarlet Geraniums, you may just as well afterwards go through some of our finest gardens blindfolded." "I am all for variety. Just notice if you please the wonderful variety of tints and shades I have congregated in this single bed, and so of all these fifty beds or more!" and before you get half over the number of beds the weariness of monotony and sameness comes over you, and you feel that mixture under such circumstances is not variety.

And yet in all these modes becoming objectionable and unsatisfactory when rigidly carried out, there is just enough of truth in them all to tell us that our perceptions of the delightful will not be satisfied with looking on merely one form or combination of the beautiful. Thus there are four hill sides which we have seen co[illegible] with timber, the soil and climate being such that the fi[illegible] as to be Larch or Scotch Fir, or both. One was plant[illegible] arch; another with Larch and Scotch, [illegible] for tree; [illegible] squares of each; and a fourth in irre[illegible] masses [illegible] rate. The [illegible] kind [illegible] nning into the [illegible] of profit. But there was no comparison of the view as a pleasing picture. The two first were monotonous; the third prim and stiff in outline; the fourth gave diversity, contrast, comparison, and yet formed a beautiful picture as a whole, on which the eye never tired resting.

Thus with this noble Park. If it had been planted chiefly with one kind of tree, be it Oak, Chestnut, Elm, &c., however massive in dignity, there would have been monotony in foliage. If a number of sorts had been planted, mixed in nearly equal proportions, there would have been no variety in the diversity. There would have been variety but great stiffness, if each kind and variety had been kept in its little circle or square entirely by itself; but so plant that one kind of tree shall greatly predominate in one place, according to situation and soil—say, here the White-barked Sweet-scented Birch; there the trembling-leaved Poplar, meeting its next neighbour among the taller Limes, followed in turn by Plane trees and Maples; and these, again, joining Chestnuts, Oaks, and Beeches, with fine specimen Thorns and Hollies on the deep upland soil, and dense woods of Thorns in the glens; whilst masses of the Bracken and other Ferns grow luxuriantly in the shaded, moist, rich spots, and little Heaths of various kinds take possession of the steep brae and mounds (that would be called hills and mountains in London, Primrose Hill to wit), in all such places where the Clematis, the Bramble, the Broom, and the Whin have not already taken possession. Then you may form an idea how the good folks of Dublin, within a few minutes' walk or drive of their customary residences, may not only enjoy in the very best way the diversified beauty of our loftiest-growing trees, but may also revel amid scenes so suggestive of the romantic and the picturesque.

"Well, it seems strangers know more about our advantages, than we do. Have driven through the Phœnix, it is true, but have troubled myself little about trees and scenery, when there was something more attractive beside me; must go again. Singular, though, not a grumble about us Dublinites; not a slap at the officials; not a fling at the Government; no lifting us up with praise and panegyric, in order that we may get a more fearful tumble down for shortcomings; no, not even a suggestion how anything could be made better or more attractive than it is!"

Not quite so fast, good friends. We speak of the impressions made on our own mind in a beautiful yet somewhat boisterous day in the middle of September. We saw so much to admire, that we could not help wishing that in this great Park of the people, if there were not floral charms, there should be more diversified and distinct forms of sylvan beauty to instruct and gratify through the organs of vision. It is only in such places where great things have been already done that you can expect still greater to be accomplished.

We may have forgotten, but beyond the private official residences we have little recollection of seeing much, or anything, in the shape of evergreens, and that, too, in a climate where they are generally so much at home. In suitable places how enchanting would groups of Portugal Laurel, Phillyreas, and Arbutus look, fronted with masses of Laurustinus and Rhododendrons, and backed by other groups of evergreen Oaks, not forgetting the sombre Yew, and groups by themselves of the upright Irish Yew, that seems so much at home in Ireland. Then, for imposing grandeur, why not have groups of the Pine tribe? There is the magnificent common Spruce (Abies excelsa), with its pretty companions, nigra and alba, not to speak of the massive broad-leaved morinda, the graceful cephalonica, the massive dark Douglasi, and the graceful canadensis, or Hemlock Spruce. Then among Silver Firs, how beautiful the common Silver (Picea pectinata), the Balm of Gilead (P. balsamea), the bristle-pointed-leaved P. cephalonica, the splendid P. nobilis, the wide-spreading Webbiana, and the close, compact, slow-growing, though very distinct and beautiful P. pinsapo. And then in the Pinus class, how interesting is even the Scotch Fir, and its many varieties (P. silvestris), even when young, and how more than interesting when they get bonnet-headed and old. Then there is no end of species and varieties, as the somewhat loose Pinaster, or cluster-coned Pine; the dark massive austriaca; the round-headed Stone Pine (Pinus pinea); the heavy-wooded, leaf-tufted ponderosa; the very elegant insignis, hardly touched in Ireland, though nearly destroyed last winter north of London, in England; the long, graceful-leaved montezuma, worthy at least of a trial; the elegant Weymouth (P. strobus); and the still more beautiful [illegible] xcelsa with its elegant glaucous green foliage, and which [illegible] the upright cembra; the [illegible]ndelabrum-like laricio; and the large-leaved, somewhat drooping Lambertiana.

But why mention these by name, or even allude to the beautiful Arbor Vitæs (Thuja), the graceful Cypresses, the stiff Junipers, the noble Cedars of Lebanon, the still more beautiful Deodars, the striking Cryptomeria and Taxodium, the more wonderful Wellingtonia, and the marvellous beat-and-puzzle-the-monkey Pine of Chili, the Araucaria imbricata, which along with the Wellingtonia, we seem already to see occupying natural mounds, and raising their distinct forms out of thickets of Thorn, Bracken, and other undergrowths? Why, indeed? Not to stimulate the enthusiasm of the worthy veteran (Mr. Wilkie) who has the superintendence of the Park; for less than an hour passed with him in his little paradise around his cottage home—that paradise so marked alike by the rare and the enticing—convinced me that in knowledge of, as well as love for the beautiful in trees, I was a mere tyro in the presence of a master professor; and that in that quarter, enthusiasm, without which nothing great was ever done, instead of needing to be aroused, was only panting to be carried out in practical development. Why, then? Just that the good citizens of Dublin should have such a taste as would foster the desire to obtain the possession of more diversified and unique forms of sylvan beauty, so that an almost unanimous request should be made to the Government that a small part of what they so freely tender to the State should be returned in the shape of an annual grant to carry on gradually these alterations and improvements.

Our paternal and free Government is sometimes accused of voting away the public money too freely. It would be something like a treat—a rather pleasing new sensation—did they even get blamed for giving a grant that would foster a love of the beautiful amongst masses of the people, with all its accompanying, refining, and elevating influences. The grant, if re-requested, will be liberally responded to, because we have no doubt that sooner or later the work will be done; and we hardly expect that the State will so willingly deprive itself of its influence and authority as to have it carried out by the people themselves, either by the help of a local rate or a voluntary subscription. One thing, however, should not be forgotten—life at the longest is short and uncertain, life cannot be long after the head turns grey; and, if not commenced early, the stored-up observation and experience of a lifetime of one who has made trees and shrubs with their distinctive features, and suitability to different positions as respects exposure, soil, and climate, his enthusiastic study may for all such improvements be lost and unavailing.

When we thus advocate giving to this Park a more diversified character, we would not wish to make much, if any, alteration with the timber now existing. We have no desire to see anything formed in the way of a regular pinetum—we would rather discard anything like regular arrangement. To us a large pinetum, with nothing but the Pine tribe in it, is about as dreary as a large fernery with nothing else to break in on the monotony. In such a case we have often been glad of a white flint stone for giving a little relief to the scene. A few fine bright-foliaged plants would in such a position effect wonders. On the same principle a group of the Pine tribe, or even a few specimens, appear to most advantage when near a group of deciduous trees. Numerous opportunities for such groups will be given without much interfering with existing arrangements.

One other grand feature in this Park is its roads—miles and miles of them—and yet most of them so firm and dry from being gently rounded, that there scarcely seemed foothold for the hardy and hard corn-fed horses of the public cars, furnishing in this respect a great contrast to most of the garden-walks round Dublin, which, being made of shingle from the river or the sea, must in its shiftiness be a rare benefit for tender feet, or those having any such a thing as a corn or a bunion. We were rather amused at seeing near one of the private lodges a large placard, with "Keep off the grass" printed in large letters, as if any one would be silly enough to go off such a bowling-green of a road, to disport himself or herself in grass pretty well high enough to reach the knees, and that, from dews and rains during the end of autumn, generally in a moist condition.

Unlike what takes place in London and other British cities, where rank, fashion, and fortune, flock to the West, the neighbourhood of the Phœnix did not seem to get more than its share. There is little of the architectural to demand attention, except, perhaps, the Military Hospital, a little past the gate to the right, and the Constabulary Barracks farther on. The Zoological Gardens make no pretensions in this respect, though rich in a general collection, and especially rich in rare Irish birds. The chief thing in the way of building that every one cannot escape seeing, is the noble obelisk a little inside of the gates on the left side of the road, raised as a testimonial of love and respect to the Duke of Wellington by his Dublin fellow townsmen, in 1817, and at a cost of £20,000. The beautiful cast bronzed relievos, have only lately been added to the four sides. Above these relievos, to the top of the obelisk, at something like regular distances, the names of seven battles are inscribed on each of the four sides—Waterloo is not among them. Was it thought that here the Duke owed something to the prowess of others, as well as to the bravery of his officers and men, and his own genius and well-matured plans and combinations? In these piping times of peace, we are apt to forget our obligations to the great hero whose heart so nobly throbbed with love to his country, and the resolute determination that, come what would and oppose what might, he would do his duty. That last word reminds us of the stirring signal sent through the fleet by the great naval hero, "England expects every man to do his duty!" Why was not the beautiful Nelson monument, built by the free, full, offerings of Irish admirers, not likewise placed in this Park for the people; instead of standing as it does in the middle of unequalled Sackville Street, cutting that fine street in two, and marring the effect of the two streets which join it at right angles? Then our youth might look alternately, now on one monument, and now on the other, and feel their souls fired to imitate their heroism and patriotism, whenever their country should be exposed to danger.

"What! thus encourage the passion for war?" No; but so long as we consider it necessary to bolt our doors, and bar our shutters, so long will it be necessary to have the sword of the soldier in reserve to give efficacy to the baton of the constable. When lusts shall be controlled, and evil passions eradicated, and justice, and goodness, and purity triumphant, then we shall expect to have peace universal and permanent. But even now, if such a noble Park is to be made the scene for monuments to the heroes of warfare, we see no reason why, like some of our cathedrals, the objects of the admiration of a people should be confined almost exclusively to men of the warlike camp. Monuments, we sometimes think, are erected as much to gratify the vanity of the living as to commemorate the worth of the departed; but if monuments either to the living or the departed are to be the order of the day, then let us in this beautiful Park have monuments to the heroes of peace who did something to spread an elevating, refining influence over Ireland—monuments to the heroes of design and invention, that have made the wildest aspirations of the magic of old the practical realities of everyday life—monuments to the heroes who by means of cars, coaches, and railways, opened up the resources of their country, gave an impetus to its commerce and its agriculture, caused two or even three blades of grass to grow where only one grew before, and placed the large loaf instead of a very small one on the table of the industrious workman—monuments the finest and the best to those philanthropic Irishmen, who in the hard times unflinchingly stood at their posts of influence, and dreamed not of any sacrifice being too great, if only that the comfort and the well-being of their neighbours could be promoted. R. FISH.

IMPROVING OLD VINE-BORDERS.

I HAVE two Vine-borders that are very wet; they were not covered last winter, and the fruit shrivelled up this summer most miserably. They are of the old sort of borders, about 4 feet deep of solid wet soil. There are a good deal of bones in them, and the Vines have made first-rate wood, which is now ripening nicely. I have covered the borders with boards this last week 5 yards wide and about 1 foot off from the ground, so there will be good ventilation to dry it a little. My employer wishes to have the Vines started early next season, but I am afraid to do so. The Vines are about sixty years old. I thought of taking the covering off at Christmas, putting a regular good heap of horse manure on the roots, covering up again, and then starting the branches in another fortnight or so.—ONE IN A FIX.

[The first thing you should do is to have a deep drain sunk in front of your border at least 3 feet deeper than the bottom of that border: this will drain it. The precautions you have taken in covering the border are good; but by the middle of October or so we would stuff beneath the boards, or, rather, we would raise the boards, and place from 12 inches to 18 inches of fern or dry litter over the border to keep the heat in, instead of having so much fermenting matter put on the top. We would do this with the part to be forced early. In addition to this, if you find on examining that there are few roots near the surface on your border, it would be well to remove a portion of the exhausted soil on the surface until you come to roots, and put a little fresh soil over them, and then give a little heat to the border with fermenting materials when you commenced forcing. This would draw the roots up into the new soil. If the surface soil is filled with roots, only cover as proposed.]

THE MISTLETOE GROWING ON THE OAK.

WHAT CAUSES VARIEGATION?

ONE would have thought that to prove a fact once in one's lifetime would be enough; but some of the Druidical witchcraft still clings to the Mistletoe, to all appearances, in the vicinity of our seats of learning, and one fact has to be proved over again every twenty years or so, as the subjoined correspondence will show.

I had a printed circular enclosing a return paper with printed headings to be filled up, from William Marshall, Esq., Solicitor, Ely, Cambridgeshire, as to whether the Mistletoe (*Viscum album*) ever grows upon the Oak?

The following answer I sent by return of post, and I hope it may keep people in the far east at ease for another quarter of a century, and that all others whom the question may concern will have better memories than some of the Cambridge people:—

"Dear Sir,—You are breaking a butterfly on the wheel. Every practical botanist who can read English might have known that the question of the Mistletoe growing on the Oak had been set at rest a quarter of a century since by Mr. Loudon and your humble servant, and the way we did it was published all over Europe and America at the time. But here is a résumé of it. I got a Mistletoe 3 feet in diameter cut from an Oak in the park of the Earl Somers, at Eastnor Castle, Herefordshire. I sent it and a large piece of the Oak branch to Mr. Loudon, and Mr. Loudon exhibited the Oak branch with the large Mistletoe plant attached to it before the Horticultural Society of London. I do not know any practical botanist who saw the specimen. Dr. Lindley is not a practical man; but they say he is a first-rate botanist, and he certainly saw that specimen and lectured on it before the Horticultural Society aforesaid.—I am, &c., D. BEATON."

I had just finished reading Mr. Anderson Henry's most interesting communication on variegation, cross-breeding, and muling of plants, when the Cambridgeshire circular was handed in to me; and to keep on the square, and on the centre of gravity, I replied first to Mr. Marshall to clear an old score out of an old story before venturing on things original with a most welcome coadjutor to these pages. If I had all my life crossed everybody who came near me, I do think you might excuse me and my crossing for having even tempted two such rival philosophers as Mr. Darwin and Mr. Anderson Henry, to contribute to our stock of practical science in THE JOURNAL OF HORTICULTURE. I have said already that all the difference of opinion about the disease of variegated plants was in the meaning of the terms, not in the thing itself.

I have seen the "OLD SHOWMAN," and had some long conversation with him on these matters. He is a very practical man, and there is a reason why he cannot give his name. Instead of writing for or against anybody's views he went to work like a true philosopher, and instituted experiments in reference to all the views which differed from his own. Instead of yarning or wrangling about curious and obscure points, he went and asked Nature how they stood in her stores. It may be a long while ere he will get an answer, and meantime I promised to go to see his experiments.

According to my experiments—say ten thousand trials, in nine cases out of ten there is actually less disease in a variegated plant than in the green parent which produced it. It is not disease, but *a certain condition* for which we have no name nearer than the word "disease." The way I prove that is this—the like produces the like in the animal and vegetable kingdoms. [illegible] noble lord whom I had known, had three sons, one very [illegible]ed was killed in the Peninsular war, the other two lived to [illegible] seventy years, and one of them only had a son, an only [illegible] The grandfather was a powerful specimen of the true [illegible] gentleman; the grandmother was from a very healthy [illegible]ock, and she lived [illegible] near eighty; the father, mother, uncles, and aunts were all remarkably healthy, and all very large in bone and muscle [illegible] the grandson is a dwarf now in the House of Lords, perhaps the smallest personage there, but he is very healthy and always was, except once, about his coming of age he had some severe illness. He travelled in all climes. I knew his valet, and he often told me his lordship, notwithstanding his small size, was in the best health of the suite in Syria, in Egypt, and all along on both sides of the Mediterranean. Now, the cause assigned for the extraordinary difference between my lord and his family cast is, that "his growth was stopped by that illness." But he is in fact on the same footing in that respect with one of my variegated seedlings, very different from his parents, but as healthy and as free from any sort of disease as that member of the Upper House. He has three children who, to all appearance are as healthy as larks.

Well, "that illness" whatever it was, works in the vegetable kingdom exactly in the same way—works in making dwarfs, all variegated plants being dwarfs relative to their parents; still they are as healthy and just as capable of producing a healthy offspring as any green species or variety of the race—I mean the race of Pelargonium.

I raised thirty thousand seedlings from the different Variegated Geraniums, beginning with the Golden Chain; and I had less variegated seedlings amongst them than from an equal number of seedlings from green parents.

In six years I raised twenty thousand seedlings from Punch by its own pollen at Shrubland Park, and never saw a single variegated leaf among them all. Here, at Surbiton, no matter which pollen I use on Punch, one-third of the seedlings from it are sure to be blotched and half variegated, and no Geranium is more free from disease than Punch.

In 1853-4 I had some hundreds of seedlings from Flower of the Day by pollen from other variegated sorts, but not a blotch did I ever get in the seedlings; and if Mr. Anderson could give me the white kind which produced all variegated seedlings with Tom Thumb, I am all but quite certain I could get every one of the seedlings from that same cross to be as green as true seedlings from Tom Thumb—that is, after growing the two for one season in my soil.

I had the first of the present race of white-flowering Geraniums in 1846, and I crossed many of them the three following years with the Crystal Palace Scarlet and with Punch, but never got a variegated plant or a good flower in these crosses; but the rose-coloured ones, as Judy, Lady Middleton, and another unnamed rose kind, produced useful flowers with the white rose, the Zonale alba, as it was then called. Shrubland Cream and Tricolor were the best of that strain, but they are only house plants and did not obtain much circulation.

Mrs. Vernon is the strongest and most healthy of all the Nosegays, but on my soil no batch of seedlings from it by its own or other pollen comes without several blotched sorts: therefore, I cannot withstand the evidence of my senses against any variegated Geranium whatever being the result of any form of disease.

I have one plant now which was a poor, puny thing from the seed-leaf, a seedling from Baron Hugel by a wild dwarf seedling of my own—an extreme cross as we say. It was three years old before it bloomed in 1859, and it is a very shy bloomer, but it is my principal breeder for minimums; and if poverty of constitution could be called a disease, here is a diseased kind to all intents and purposes, and yet with all our variegated kinds it will not throw off one blotched leaf in any of its seedlings. It will be the father and the mother of a new race of as healthy and free-growing seedlings as Punch, and none of them will ever rise to the stature of the Golden Chain. The first of that dwarf breed will be in the market next spring by the name Henry Heiover, after the author of "Table Talk and Stable Talk," a charming writer on horses. Harkaway was one of his favourite runners, and this seedling is from the Harkaway Geranium, by the pollen of my dumpy.

Pray all ye who believe in this disease question buy Henry Heiover as soon as it is out, and try it with the pollen of all your diseased seedlings. It is the most minute of the race except Dandy, but is as good a seeder and as free a grower and bloomer as ever was planted out: therefore, it must possess less constitutional powers than any except Dandy; and if there is truth in your disease conceptions, this is the kind which is the most likely in the world to produce diseased seedlings, if it is crossed with diseased male parents. There never was a better chance to prove the question than when you have a great brood of diseased seedlings. Tell me the name of the male parent and [illegible] what he cross with it, and shall lay my head on the if I do not reproduce the same crosses just as green and ihood; and quite as healthy as Harry Heiover. I have that lence in my soil. The diseased parents failed in so many ices to transmit their taint in this soil, that I am justified ke so bold upon it. The American blight which cripples pple in the orchard is not a disease, and cannot be trans- l like the canker, which is a true disease, and never fails to r in the seedlings sooner or later. But the American stunts the trees woefully, and so does the blight which ices variegation.

Morren's vast explanations are just so many airy nothings. and surmises shall never controvert facts, and the fact is give me the two most diseased plants of Geraniums in cul- on, and I shall cross them and confute with the progeny high ideas of continental philosophy about this disease. at I am quite certain.

l not Mr. Anderson read as much nonsense about crossing, or four years back, from a British pen of undoubted ific strength? and might not some sober people on the nent who were conversant with the simple facts by prac- xperience, marvel that such ideas were current in England, s I was amazed with Dr. Morren's elaborate review? d upon it, we are all of us wrong in pinning faith in high- ing disquisitions from great men, and in overlooking the nd slow progress and process of the simple practitioner may not know how to put three ideas together in black white. But a clever practitioner at his pen might very go over Dr. Morren's formulæ, and confute them by actual les, one by one, from beginning to end. I may be partly , but I recollect perfectly well that my impression was on g the article, that I could myself smash many of his best ation stones to splinters.

Herbert was the first scientific writer in this country who unded the doctrine that the world was clothed from the ce of a very few kinds of plants, in his first book on bulbs 21, or about that time. In 1836 he recurred to the subject largely in his "Amaryllidaceæ," and when he was per- d for an atheist, and made to be the author of the "Vestiges ation," he vindicated his fame, and gave glimpses of his xperience on that subject in the Journal of the Horticul- Society, where he exhausted the subject.

, in conclusion, I have yet some hopes left me that I shall day discover the true and real cause of variegation in . I had a point or two solved in rubbing shoulders with SHOWMAN," who is all but a Darwinian from top to toe. st find time to run down and see him, however, before I ay aught anent that part of the subject; but if I under- him rightly, he will not long cling to the notion that men ange a blade of grass from one form or colour to another, hrough the process of Nature by fertilisation.

D. BEATON.

OTES ON SOME OF THE FRENCH NURSERIES.

ris, OCT. 10.—While Mr. Fish is doing what Topsy l call "telling his spinners" as to Ireland and her horti- al position and prospects, it may not, perhaps, be unin- ing to some of your readers to hear a little about the doings is side of the water. We so look now to France for Roses, oli, Phloxes, and other flowers, that if people are of my it is always a point of interest to know a little about the and the localities from whom and whence they came; and grimages are made to certain spots where people have died buried, surely we who, perhaps, take as much interest in g nurseryman as in a dead hero, may be excused if we there is something a little more rational in visiting those an talk and act. Of the former we may say—

> "The knights are dust,
> Their good swords are rust,
> Their souls are with the saints I trust."

ith the latter we can shake hands, talk bad French, and horticultural talk as best we may; for amongst other which the English Trojans (*vide* "Cornhill Magazine" is month), have imported into Paris, a Trojan Nursery is umbered.

impression that one has of a Parisian horticultural ishment (I have not as yet seen the provincial ones), is the very liveliest character. They are small, untidy, and the appearance of the greenhouses is more that of a series of pits than of what we are used to in England; and one's idea at first was, these good people have a good deal to learn about greenhouse construction. But a more careful consideration of circumstances showed that such an idea is wrong. Our great object is to obtain as much light as possible, that of the Paris nurserymen to exclude it. The hot glaring sun and the brilliant clear atmosphere of the city, coupled with the white gypsum of the soil, would be too much for the plants in structures like ours: and hence nearly all theirs are grown in low span-roofed or lean-to houses, the walls thick and the panes of glass small.

The size of the nurseries indicates, I should suppose, a comparative smallness of enterprise, or, as one of them said, "I must creep on little by little." Though in most instances this, too, is deceptive: for many of them have three or four different pieces of ground in various parts of the environs. Ground in Paris is now becoming so extravagantly dear, that shortly they will, they say, all be driven outside: and hence it is that one sees, even with some of the first houses here, a piece of ground which would only satisfy a third or fourth-rate nurseryman in and about London.

There does not seem to be that continuance in the calling which we see on our side. In many of our large establishments it goes on from father to son through generations; but here, so they tell me, the position of a nurseryman is not like what it is in England, and, if the father makes money, the son considers himself too good for his father's business. But there is another matter which has a good deal of influence in damping energy in this country—namely, the laws of succession. A man may toil and labour all his lifetime, may get a fine property together, but at his death it must be divided amongst his children. Happy, therefore, the Frenchman considers himself if he has but one boy. A boy and a girl, they say, is a family fit for a king. As one of them said to me to-day, "I have been twenty-four years in this business. I have now a fine property; but after me it is finished." One must not fall into the Frenchman's failing of generalising on all matters; but it seems to be tolerably clear that such a state of things must be injurious to enterprise, and to horticultural enterprise amongst other things.

Amongst the best known of French nurseries is, I suppose,

THIBAULT AND KETLEER'S.

This is situated in the Rue de Charonne, not far from Père la Chaise. Small in size, to our eyes at least, but containing a good collection of many valuable things. They are purchasers of most of the new plants which are introduced into France, Belgium, and England, and are the distributors to the public of the new Gladioli raised by M. Souchet, who grows 50,000 seedlings, and has this year introduced six to public notice, of which great things are said. Whether they will equal the Bagshot varieties is, I think, very questionable. Amongst other things that I noticed here were some fine Erythrina, Marie Boulanger, which Messrs. Henderson have figured in their "Illustrated Bouquet," and Floribunda, very dwarf and of a beautiful rose colour. There is also another, which they are about sending out, between these two, also very dwarf and of a beautiful rosy crimson colour, called Ruberrima. Whether we may ever look for these succeeding well in our variable climate is a question; against a wall they would probably do very well.

Amongst ornamental plants for turning out of doors in the summer, and making a fine show of foliage, I saw here Wigondia caraccassana, an old plant, but now much in vogue here, and Ferdinanda elegans; both of these attaining in a single season a height of from 8 feet to 10 feet. They are to be seen in many of the public gardens and other places in and about Paris, in the greenhouses and stoves. I noticed a fine plant of Berberis trifurca in full fruit, and a very remarkable-looking Fern—Lycopodium dichotomum, the fronds hanging down in festoons almost like some of the Cereus tribe, and as unlike a Fern as one can well imagine anything to be. There was also a very pretty Orchid called Selenepidium Schlelemii, with a rosy purple labellum, small, but very neat-looking and pretty. Also Streptocarpus biflora polyanthus, a hybrid between S. Rhexii and S. polyanthus, and partaking decidedly of the character of both parents: it promises to be a very pretty greenhouse herbaceous plant. But one of the things which pleased me most was a plant unknown to me—Eucharis amazonica, an Amaryllid-looking bulb, with a flower-scape holding two or three blooms of pure white, with a cup somewhat like a Narcissus with a greenish tinge on it: it was very fragrant, and altogether a pleasing thing. Their general stock looked in good health both in the houses and out of doors.

Not far from their Nursery lives

Monsieur Rougiere-Chauviere,

the son-in-law and successor of Monsieur Chauviere, to whom we were indebted for the first move in the Geraniums which have introduced so much variety into our own breeds. Mons. R. introduces into France many of the new florists' flowers brought out in England, Pelargoniums and Dahlias especially: and hence, as it was too late for these, there was comparatively little to be seen. He was, however the purchaser of the valuable collection of Orchids of Madame Pescatore, which he added to his own already good collection: and hence he has a *spécialité* for these plants. The finer specimens, he said, were gone; but there was still a large number, which would probably receive more attention now but for the fact that the finest collection in Europe is shortly to be brought to the hammer—viz., that of M. Schiller, of Hamburgh. Mons. R. spoke highly of a new Delphinium called Madame Guichald, which he described as being very fine and with a beautiful white eye. Abutilon Duc de Malakoff, planted out, was very fine with flower, three times the size of striatum, very freely produced, and the plant itself so vigorous that it had attained the height of 6 feet or 7 feet in the summer. He also mentioned, as a very pretty herbaceous plant, Stokesia cyanea, dwarf, and having, as its name imports, flowers of a sky blue colour.

Here, too, there was a collection of plants in very good health, though, of course, the time of year was unfavourable for seeing them; but it was not unfavourable for experiencing the great kindness and hospitality of both of these firms. Accompanying as I did Mr. Standish, of Bagshot, whose name is itself a passport, I was a sharer in the hospitality, which was, I doubt not, a return for that he so liberally dispenses to all comers at his own house; and no people can show it in a kindlier and more agreeable way than the French can do.

I hope next week to say something of some of the provincial nurseries. Time and postage necessitate brevity now.—D., *Deal.*

SULPHUR AS A DESTROYER OF RED SPIDER.

The confidence which "T. R." places in sulphur as a remedy for red spider, would almost persuade me to believe that my want of success was owing to my want of faith, knowing how efficient the latter is in assisting a remedial agent; but as the patient and not the physician must exercise the faith, and as I cannot suppose that plants may be induced to believe in sulphur, I am obliged to look elsewhere for an explanation of results apparently so totally at variance as those mentioned in the previous letters on the subject. My doctor often has lamented to me, that when he has treated a case to a successful issue, he cannot tell whether the patient has recovered through or in spite of his remedies. This remark appears to bear on the case of the Vines. "T. R." says that a pan of water covered with a thick coat of sulphur standing in a hot place under the Vines, has been for years a perfect preventive. Can he be sure that the Vines would have been attacked if the sulphur had not been there? The Vines in my house, where Peaches, Figs, &c., are infested with red spider, are thoroughly healthy, and free from the insect.

Again, for years I cultivated Vines in a house close in proximity to a large Apple tree, the north side of which was invariably unhealthy and covered with spider (the south side being as invariably healthy and clean), but the Vines were never attacked, yet not an atom of sulphur or any other remedy was used as a preventive. As to the Peach trees in the ground [illegible]ry mentioned in "T. R.'s" letter, I cannot help thinking that another and much more efficient remedy was at work simultaneously with the sulphur applied as stated in the first week in July, for at that time rain began and continued to fall during the whole of the month. Healthy root action, probably, [illegible]seque[illegible] commenced, and soon rendered the trees dis[illegible] to [illegible] insect. According to my observation neither this nor re[illegible]der will attack a thoroughly healthy plant. The insects are [illegible] cause but the consequence of disease.

Sper[illegible] from theory as to the effects of [illegible] that the shoots which [illegible] of [illegible] were [illegible]

more so, for one plant on the other side of the frame remained comparatively clean. In my house, which is only 33 feet long, there is a tank of water with an exposed surface of 20 feet by 3 feet; this, with frequent syringings, must afford a considerable amount of atmospheric moisture, which combined with the vapour of the sulphur strewn all over the house, ought, according to theory, to have been sufficient for the purpose; but the facts, unfortunately, would lead me to conclude that the combination was congenial to the insects.

I will mention one amongst the numerous instances which have come under my notice, tending to prove that the attack of the insect is more dependant upon the state of the root than upon atmospheric influence. I planted in the middle of a bed of Strawberries in a large pot without a bottom, sunk into the ground to within 6 inches of the rim, and filled with good soil, four Strawberry plants, and watered them regularly, while all the surrounding plants which were growing on a subsoil of porous sand, and were not watered, dwindled away, the little sap they managed to elaborate from the dry ground being sucked out of them by my voracious enemy. The four plants in the pot rejoicing in the deeper soil and regular watering throve, and up to the present time have repelled the insect.—E. T., *Solihull.*

CAMELLIAS BLOOMING PREMATURELY.

Will you help an old subscriber who is in trouble with his Camellias? They are one and all in full bloom. They were potted the beginning of July, and set out of doors behind a north wall. They were in a cold greenhouse before they were potted. What am I to do with them after they have done blooming? They are out of doors yet, and look well behind a north wall.—Yorkshire.

[The fine season has brought your Camellias forward, though there are not many quite so forward as yours. You have no reason to be alarmed about them. House them, and keep them in the house in the usual way, only perhaps you need not mind forcing them to make wood early next spring. Most likely they will incline to come a little earlier for some years to come so as to bloom regularly at the end of autumn and the beginning of winter without anything like forcing at any time.]

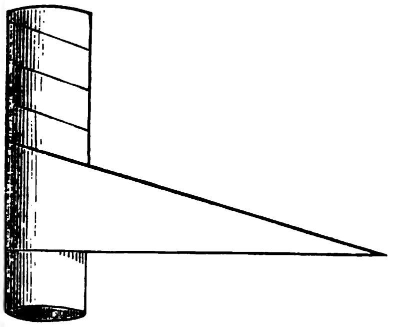
MECHANICS AND MATHEMATICS APPLIED TO GARDENING.

(*Continued from Vol. I., page 403.*)

The Screw.

This is a compound mechanical power; for it is useless unless set in motion by a lever.

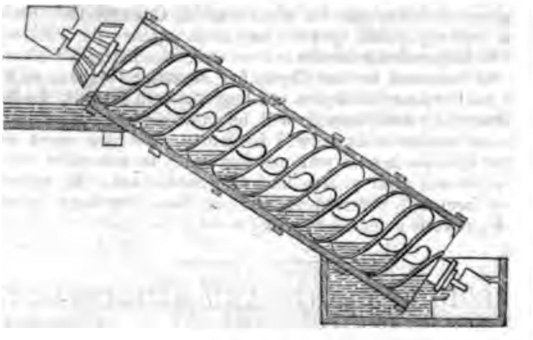
A screw is an inclined plane passing spirally around a central spindle. It may be represented accurately by winding a piece of paper cut into a right-angled triangle round a cylinder, as in this diagram. The hypotheneuse, or longest side of the paper, would form the spiral line representing the *thread* or *worm* of the screw. Every circle made by the line represents what is called a *spire* of that thread. The distance from any spire to the next spire is called the *breadth* of the screw. When the thread round the cylinder is elevated or raised, it is called a *male screw*. If the male screw is fitted into a solid having a spiral groove within it, corresponding precisely with the thread, that spiral groove is called the *female screw* or *nut*.



It is the combination of these, set in motion by a lever, that constitutes the mechanical power of the screw.

[illegible] application of the screw to gardening purposes that ve seen attempted is in the extraction of stumps of large but we do not remember the result.

hydraulics there is an application of the screw form which ; be employed by gardeners with great advantage in raising to a higher level. It is called *The Screw of Archimedes,* ometimes the *Archimedean Spiral.*



:himedes' Spiral is either a flexible tube open at both ends ound spirally on the exterior surface of a cylinder; or it e a plate of metal coiled about an axis, like the threads of w, and enclosed within a hollow cylinder, so as to be com- water-tight. The machine is fixed in an inclined posi- with its lower extremity immersed in the water which is to sed. While it is at rest the water occupies the lower part en two of the threads, or bends of the spiral, at bottom; hen turned on its axis, this part of the machine being to ascend, the water will by its gravity be caused to d into the lower part between the next bends of the spiral, in reality it rises, with respect to its former position, in quence of the rotation of the tube, or bends, within which nfined. Thus the water continually proceeds towards the part of the machine, from whence it is discharged into a oir placed to receive it.

s shown, by writers on hydraulics, that this machine can- ise water when the angle which a line drawn centrally on iral bends makes with planes parallel to the base of the er is greater than the angle which the latter makes with rizon; and it is recommended that, in practice, the angle the axis of the cylinder makes with the horizon should be en 40° and 60°. Such a machine is particularly useful the water is mixed with gravel, weeds, and the like which spoil the action of a common [illegible] it is desirable to und[illegible] an Archimedean Screw fect, we aid [illegible] uers by stating that if the diameter of rrel round which the tubular screw is coiled be 1 foot, length 30 feet, and the diameter of the tubular screw is es, then, if the tubular screw forms thirty-seven spires the barrel, it will contain of water rather more than s. avoirdupois. It will raise the water to a vertical height rly 27 feet; and the force or power to turn the barrel or er, applied at its circumference, will be just over 44 lbs. the force acts by a winch at the distance of 10 inches the axis of the barrel, the requisite force will be only s. If it makes a rotation once in five seconds it will raise 3719 lbs., or about 364½ gallons, of water in an hour. If locity is tripled, which it may be without being fatiguing, 1094 gallons will be raised nearly 27 feet in an hour.— *ry's Mechanics,* ii., 350.)

T TO LOOK FOR ON THE SEASHORE.

(*Continued from page* 50.)

CRUSTACEA—(*continued*).

GREAT CRAB (*Cancer pagurus*).—The shell of this is of an oblong form, and is minutely grained on the ; the anterior feet are large, strong, and smooth, and te either of spines or tubercles; the remaining feet are compressed, and furnished with a quantity of stiff hairs. our on the upper surface is a reddish-brown, on the under white, the legs of a deeper red, and the claws black. creature, having from its superior flavour been in considerable demand, has also become the subject of more careful investigation, the result of which is that its habits and the places it frequents are better known and understood than those of most other species. It is to be found on all our coasts, preferring the more rocky portions. Its customary retreat when not engaged on a foraging expedition being a hole in the rock, small ones may be seen continually in the pools left on the sands when the tide has receded; the larger ones keep farther out at sea, frequenting the rocks in deep water. They are also fond of burying themselves in the sand, but always in the close neighbourhood of the rocks. The mode of carrying on the Crab-fishery is simple—nor can I do better than extract the interesting account given of it by Professor Bell:—

"The fishery for these Crabs constitutes an important trade on many parts of the coast. The numbers which are annually taken are immense, and as the occupation of procuring them is principally carried on by persons who are past the more laborious and dangerous pursuits of general fishing, it affords a means of subsistence to many a poor man, who from age or infirmity would be unable without it to keep himself and his family from the workhouse. They are taken in what are termed 'crab-pots,' a sort of wicker-trap made by preference of the twigs of the Golden Willow (*Salix vitellina*)—at least, in many parts of the coast on account, as they say, of its great durability and toughness. These pots are formed on the principle of a common wire mouse-trap, but with the entrance at the top; they are baited with pieces of fish, generally of some otherwise useless kind, and these are fixed into the pots by means of a skewer. The pots are sunk by means of stones attached to the bottom, and the situation where they are dropped is indicated, and the means of raising them provided by a long line fixed to the creel or pot, having a piece of cork attached to the free end of the line; these float the line, and at the same time serve to designate the owners of the different pots—one, perhaps, having three corks near together towards the extremity of the line, and two distant ones; another may have one cork fastened crosswise; another two fastened together, and so on. It is, of course, for their mutual security that the fishermen abstain from any poaching on their neighbours' property: and hence we find that stealing from each other's pots is a crime almost wholly unknown among them. It is at Bognor and Hastings, and in Studland and Swanage Bays, in Dorsetshire, that I have principally had opportunities of personal observation on these points. If the Crabs," the Professor proceeds presently to say, "are not wanted immediately on being taken out of the pots, they are placed in store-pots, which are of the same form and materials as the others; but considerably larger. They are conveyed to great distances—as far, for instance, as from the coast of Norway to the Billingsgate Market in well-boxes, which are of wood very strongly constructed, and with holes in all the sides to admit of continual change of water, as the boxes are drawn through the sea attached to the vessel."

My object in making this extract is, that should any of my readers previously unaquainted with the mode of "Crab-fishing" happen in their wanderings to fall in with the process in operation, they may be in some measure familiar with the means used; and, consequently, feel more interest in watching it. The food of the Great Crab is for the most part of an animal kind, such as dead fish and the like, and it is supposed that it detects the presence of food by the smell rather than by the sight. It is also said that the bait which so often attracts it must be quite fresh; but this is not only discountenanced by Professor Bell, who says that he has "often seen Crabs taken with Lobsters in pots, in which the bait was far from being sweet," but would appear to be further improbable from the fact of its principal food consisting of dead fish, a large quantity of which lies for days and days, perhaps, before it is discovered and devoured.

PILUMNUS HIRTELLUS.—The shell of this species is smooth, its breadth greater than its length, in the proportion of seven to ten. The anterior legs are remarkably powerful, thick, and rounded, but they are by no means equal in size. In some specimens you will find the right, in others the left the larger. The wrist is covered with tubercles, and is provided with a single spine, being at the same time slightly hairy. The smaller and fixed claw is of a triangular form, strongly toothed and having tubercles on its upper and outer surface, whilst the larger and moveable one is very nearly quite smooth, and very much curved. The remaining legs, which are covered thickly with hairs, are slighly rounded above, depressed beneath. In colour most of the species are of a brownish-red, spotted with a dull yellow. The anterior legs are also a brownish-red, the claws a light brown; the other legs are red with yellowish bands.

The Pilumnus hirtellus is a species very commonly met with along the whole of our western coast, and very frequently on the south coast also, as it has been taken in Cornwall, and on the coast of Devonshire, Dorsetshire, Hampshire, and Sussex. It is found under stones at low water, and may be taken in the dredge in deep water. Professor Bell mentions a singular fact in connection with this species—namely, that amongst twenty or thirty specimens he found only one female, and that a dead and mutilated one.

Portumnus variegatus.—The shell of this species bears some resemblance to a heart, marked with elevated, closely-set, and minute dots. It has four teeth on each upper side, and three in the front, that in the centre being longer than the other two. The anterior legs are of moderate size and length, rounded on the outer sides and flattened on the inner; both claws, the moveable and immoveable one, are toothed, the remaining legs are slightly compressed, and being terminated by a swimming-joint proves that their possessor is an inhabitant of deep water. In colour the Portumnus variegatus is of a "pale, dull, purplish-white, mottled with a darker hue." It is a beautiful species though not a very common one. It is found, but not in any considerable quantities, on the western and southern coasts, and is occasionally found in Ireland, "thrown ashore on extensive sandy beaches." It is frequently taken by digging down beneath the sand at low-water mark.—W.

(*To be continued.*)

BEDDING PLANTS IN A GREENHOUSE.

DISTINGUISHING GERANIUMS—STARTING BULBS.

My greenhouse is a lean-to, with stages up the back, a flat stage in front, and three boards hung about 1½ foot from the rafters: which sort of bedding plant will most require to be near the light?

How can I distinguish Punch, Tom Thumb, Trentham Scarlet, and a pink Geranium cuttings? My odd man mixed about four hundred of them in my absence yesterday.

Starting Hyacinths, Van Thol Tulips, Narcissi, Scillas, Snowdrops, and Crocuses now, as "E. A. M." advises, will any of them flower before the end of January, not forced? and which would bear forcing best?—Clericus.

[Young Geranium plants, Verbenas, Petunias, &c., require most light. Calceolarias, if kept there at all near the light, should stand on damp moss.

Though we could distinguish the Geranium cuttings ourselves with a little trouble, we could hardly tell you how to go about the matter. Let all grow as they are until the spring, and separate them as they show flower, when flowers and leaves too will be more distinct than now.

Unless the weather should be very mild, the bulbs you name will not be in flower in January. Snowdrops, Crocuses, and Scillas will come first, and these do not force well until the flower-stem appears. Hyacinths and Tulips must be forwarded by one or several of the methods frequently referred to.]

CONVERTING A PIT INTO A SMALL FORCING-HOUSE.

I have a pit 20 feet in length by 6 feet wide, which I want to convert into a little forcing-house for a few bulbs and other plants for winter flowering, also to keep a few odds and ends of stove plants until the end of January, when I intend to shift 'hem into another house, and devote this one to Cucumbers. : intend heating it by a flue. I have a plan in contemplation, 'ut before commencing operations I shall be glad of a little of your advice about making the flue, hot-air chamber, bed for 'ucumbers, &c. I want a path inside next the back wall. I ·· use dung along the front wall next the hot-air chamber if 'hink it an assistance.—An Old Subscriber.

If you place your furnace at one end at the back, the flue, as a ··d broad one and for 6 feet or 7 feet built brick on bed, may proceed along the front across the other end and up a chimney here. A narrower flue would do if you merely took it along ·e front and returned it again to a chimney over the furnace. hi: latter case the flue should not in both cases be level, it [illegible] there with a curve, and rise thence 3 inches to the chimney. This will insure good draught. You would require a pathway say 2½ feet. A brick wall a brick thick would separate this pathway from chamber and bed over the flue. Openings should be left in the wall—say five, 1 foot long and 6 inches wide, to let the heat from the chamber into the house directly as wanted, being provided with sliding shutters of wood. The bed left will be quite wide enough for the roots of Cucumbers. To save room behind, a shelf or two may abut against the wall, and a shelf be suspended from the rafters over the path—all of which may be removed in the Cucumber season. If there is much front wall exposed, and you can keep the rain from it, the lining of fermenting dung outside will be an advantage; if not, it will be more trouble than it will be worth, and you must guard against all openings if you use the dung in a rank state, or it may serve out your plants, and Cucumbers too. By using the means frequently referred to you can have dry heat or moist heat from your chamber at will.]

BEDDING PLANTS AND BEDDING-OUT.

That our present bedding-out system is a great improvement upon the past no one can with any degree of truth deny. Strides as rapid have been accomplished as with travelling. We are no longer content with the "old coaching on the road," neither would our employers be well pleased to find the same arrangements carried out in their flower gardens which were adopted some thirty years ago. We are now expected to accomplish great things in the bedding-out line: we are not only expected to have large masses of brilliant colours, but at the same time are expected to arrange those colours creating a harmonising contrast. Having written thus far, we have not the least hesitation in making the assertion, that all this is accomplished in scores of places in the three kingdoms. But out of all this arises the question, Have our means kept ratio with the progress expected? We are only, alas! too, too sorry to add a negative here. We are now expected to turn out as many thousand bedding plants in May as our forefathers turned out tens, and exactly with the same means; no more accommodation in the way of glass, not a little more labour—in fact, no more anything, and we should much like to see the subject well ventilated in the garden literature of the present day, and the claims of "the craft" brought before the public. Let The Journal of Horticulture be the pioneer.

When we began this paper our object was to make a few remarks on various styles of bedding-out we adopted here this season; but having so far digressed from the subject we must be brief, and should such be found worthy to grace the pages of your Journal, we may again at some future time furnish further matter, especially as we see from time to time various correspondents giving their practice in detail upon a subject full of interest to all true lovers of a well-kept flower garden, which is one of the most beautiful scenes we can gaze upon.

In the west of Scotland where we are, this season has been one of the worst imaginable. We have not had six continuous fair days since the month of May, consequently bedding plants have suffered fearfully; still we are surprised to find certain plants do so well. Notwithstanding such repeated drenchings Calceolarias, as a whole, have been all we could desire, and up to the time we write (Oct. 14th) are finely in bloom. We find aurantia multiflora our best yellow. We grow aurea floribunda, but the former has beaten it here this season. Amplexicaulis, which has many objectors, and is discarded by others, makes a most effective bed here, its only fault is its "legginess." The same rule applies to Sultan, but for all this his sable majesty has been as much admired as any high personage in the garden. We grow another shrubby one called Purple Gem. This makes a splendid bed, stands both sun and rain well, habit all that can be desired. Prince of Orange, although rather of a weakly constitution, is fine here, but most liable to be spoilt by rains. We grow various other kinds, but the above are what are principally dwelt upon both for "chain-borders," "panelling," and ordinary beds.

Upon two borders of the following dimensions—viz., 126 feet long and 14 feet wide, we carried out the "panelling" system which, according to our taste, surpasses all other styles which exist at present. Our groundwork on one border was Lobelia speciosa (true); panels, circles, Calceolaria aurantia multiflora; edge next, Box, Variegated Alyssum; 3 rows behind groundwork [illegible] Dahlias; 3 Hollyhocks.

Our other border consisted of the following material—groundwork, Verbena Evening Star; panels, circles, double Feverfew, kept dwarf by early pinching; front row next Box, Geranium Brilliant, spring-struck plants kept dwarf and free from bloom; three back rows—1, Ageratum; 2, dwarf Dahlias; 3, Hollyhocks.

Both these borders looked gorgeous notwithstanding the common material employed within every one's reach. We had one chain-border, which was far inferior to the "panelled" ones, still it looked neat and gay; length 156 feet. Our front row was Variegated Alyssum; 2, Lobelia speciosa; 3, Calceolaria Mrs. Beecher Stowe; 4, Verbena venosa; 5, Cineraria maritima; finishing with dwarf Dahlias and Hollyhocks.

Upon a short border at one end of our ribbon we tried the following arrangement, which is contrast of colour with a vengeance. Groundwork Cerastium tomentosum; panel, ovals, Perilla nankinensis; front row, Lobelia speciosa; back, Love-lies-bleeding, dwarf. This arrangement was pleasing to the eye, although not brilliant.—JOHN EDLINGTON, *Lennox Castle, Lennoxtown, N.B.*

WINTERING GAZANIA SPLENDENS AND VARIEGATED ALYSSUM.

WHAT is the best mode of wintering the Gazania splendens? Should the old plants be taken up and cut back? and should they be kept in a cold frame, or in a growing heat till fit to turn out again?

Should the old plants of Alyssum be taken up and potted, or do you recommend taking cuttings? I have always found the cuttings of Alyssum very difficult to strike, and if put into a Waltonian Case they invariably damp off.—AN OLD SUBSCRIBER.

[The best mode of wintering the Gazania splendens is in a greenhouse, kept just as for Heaths, say in a heath-house. The old plants should not be taken up at all, but young cuttings be made about the middle of September; they root much faster than Verbena cuttings, and keep in the same pots all the winter easier than any other cuttings for flower-beds. But every one of the old Gazania splendens could be taken up; and if they were cut back, as you say, they would keep in cold frames where Calceolarias would do. They want no heat, and little care, but in March and April they would give cuttings enough to stock a farm; the cuttings would root then in seven or eight days in a hotbed, and in ten more days be fit to plant out, and cuttings so made on the first day of May will be fit to plant out after the Verbenas.

There are many Alyssums used for flower-beds, and you do not mention the kind you want kept; but the Variegated Alyssum is probably the one you intend, and if so, every word about Gazanias will do for it, except the spring cuttings not to be later than early in April. The best way of propagating is by September cuttings, and the best wintering place a heath-house, and the best spring treatment is to pot them singly at the end of February, and to keep them in a dry hothouse, and in a heat of 55° for three weeks after potting; then to go to the heath-house, and on shelves up near the glass. But the same treatment as for Verbenas will do in the ordinary way. No plant comes from cuttings more easily than the Variegated Sweet Alyssum. Mrs. Walton used to strike it in the Waltonian Case without losing one out of 500—that we have witnessed; but now she allows the gardener to manage the Case, and he prefers it to making a dung hotbed.]

WINTERING GLADIOLUSES—SPERGULAS FOR EDGING—GAZANIA SPLENDENS.

THE Gladiolus does not live through the winter in my garden, the bulbs rotting away. I have now taken up those I planted in April, and put them in layers in a box with dry sand, the bulbs not touching: the box will be kept in a dry and rather warm room. Am I right in this mode of keeping them till next April?

I find the Spergula pilifera makes a very neat edging for borders. I planted mine in April last, a single row of small pieces about 2 inches apart. The edging is now 3 inches broad, perfectly even on the surface, and also at the sides which were cut with the turfing-iron in August to a straight line on each side. It is superior, I think, to Box, and no footstep or wheelbarrow will hurt it. It has required no water, and now looks like a piece of velvet. When in flower it was much admired for the contrast of the clear white star-like flower resting on the green. I have some borders edged with Spergula saginoides, but it is shabby by the side of pilifera. I also use a great deal of Sedum acre, but it requires a row of flints or bricks set firmly in the ground, and the Sedum to be planted inside. It soon covers the flints, and is kept neat very easily with about twice clipping in the year, and the flints or bricks keep the growth short.

The Gazania splendens has flowered well with me this year on a raised bed formed with burnt bricks. The Gazania has grown into a compact mass, and the flowers stand out well.—KATE.

[You have done your Gladioluses just in the best way possible, and your account of the Spergula pilifera gives us a key to the reason why the Gladioli do not winter with you in the open ground. Your soil is too strong and too retentive of moisture for any of the half-hardy bulbs to winter safely in it; and your Spergula saginoides (?) which is a mountain plant needing moorish soil, does worse with you in summer than the Gladioli in winter. It will neither die nor look well; but it is ten to one if one person out of ten who grows these Spergulas and Spergularias has the *true* saginoides. We had over twenty samples of saginoides sent us from as many places, and not one of them was true, except from one place high up in Scotland. All the race grow as well and as freely with us in the cocoa-nut fibre as all sorts of delicate Ferns; and saginoides is the dwarfest of them all, and has not yet offered to bloom at all. Upon a fair calculation, two plants of pilifera would cover as much ground in one season as five and twenty plants of saginoides. How does that tally with your experience?

Where the land suits pilifera there is no plant in cultivation which can compete with it in neatness or richness of verdure, and the more it is trod on the better it looks.

The Gazania splendens we consider the best yellow-flowering plant we have for large private gardens, and about one of the worst for public ones—for this reason: "The company" in private places spend the fore part of the mid-day hours in the garden when splendens is in its prime; then they go to luncheon, and in the afternoon out for rides and carriage-drives. In public gardens the company go in the afternoon, and splendens is then nodding.]

HEATING BY A FLUE A CUCUMBER AND MELON-HOUSE.

IN the course of last spring I erected a house in which to grow Melons and Cucumbers. It is a lean-to house, 25 feet long, 11 feet broad, back wall 7 feet high, front wall 3 feet high. A path 3 feet wide runs down the length of the house, and is contiguous to the back wall. The bed in which the Melon and Cucumber-vines are planted extends along the length of the house, and is 8 feet broad and 3 feet deep. I trained the Cucumbers on a trellis close to the glass, and found this plan to succeed admirably. Hitherto I have employed tan as the heating material. I now propose to heat the house by means of a flue, and am anxious to know if the following plan would be likely to be attended with success. I should place a small brick fireplace outside the house about the middle of the side wall; thence I should run a flue of nine-inch glazed pipes along the centre of the earth-bed about 18 inches below the surface of it. The return-flue I propose to make of brick, which I should run along the inner edge of the surface of the earth-bed to supply heat to the atmosphere of the house, and keep off frost.

I shall be greatly obliged by you informing me as to whether you think this plan would answer? Also what depth of earth there should be over the underground flue?

[There should either be a chamber over the flue, or brickbats, stones, or clinkers over it and round it, so that the earth did not rest on the flue. The mode of doing this best has been frequently mentioned of late. By having a few air-pipes communicating with these clinkers, but not directly with the flue, you might have moist or dry heat from the flue. The moist bottom heat would, as shown the other week, be useful for Melons at a certain stage. You could have moist heat in your atmosphere by evaporating-pans on your top flue. We would thoroughly alter your arrangements so far, that we would have a good stout, thick flue below the bed, and the pipe-flue for top heat.]

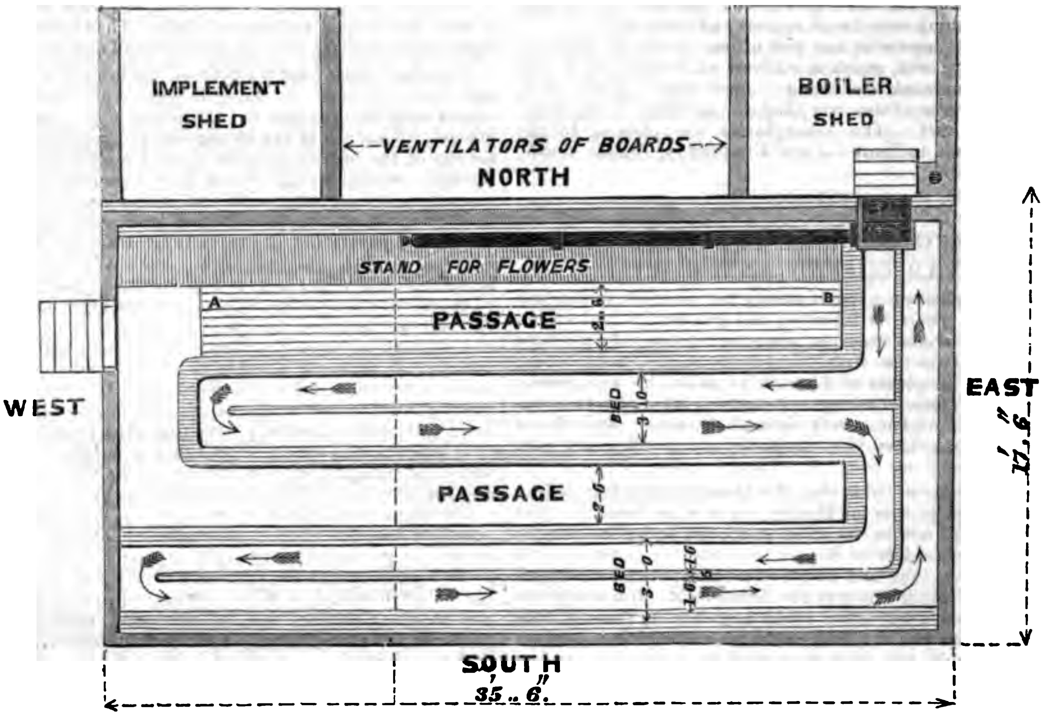
CONSTRUCTION OF A HOTHOUSE—GROWING CUCUMBERS AND MELONS TOGETHER.

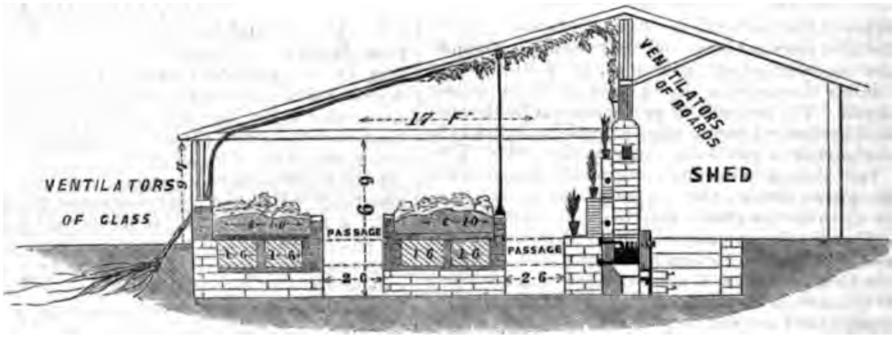
I DESIRE your opinion on the enclosed plan of a hothouse; but as I feel that I have no right to ask a question of merely personal interest from which your readers can derive no information, I will endeavour so to generalise mine that every one may appropriate for his own purposes so much of your answer as may suit his own case.

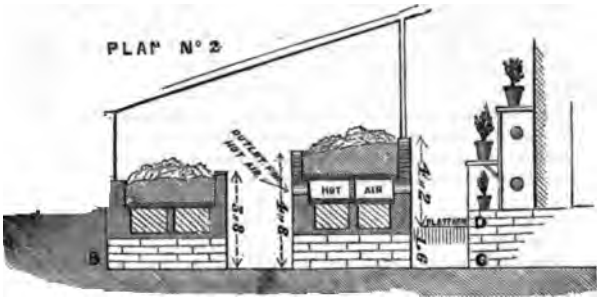
I propose to erect a house 34½ feet by 17 feet inside. It will have two long beds, each about 4 feet wide, with a passage of 2½ feet between them; and to the rear, after another passage of 2½ feet, a stand for flowers or dwarf fruit trees.

The beds are to be made over hot-water conduits formed of brick, lined with cement and covered with slate.

The cemented conduits will receive their heat directly from the boiler (one of Arnott's stove boilers)—*i. e.*, there will be no







iron pipes containing hot water carried through them. I am but a bad gardener, but I am told that Cucumbers require a moist heat and that Melons thrive best in dry heat.

I propose that the front bed shall be appropriated to Cucumbers, and that the slates covering the conduit shall be laid on without cement, so that moist vapour may ascend to their roots.

I propose to make the bed for Melons over a sort of hot-air chamber formed thus: I will cement the joints of the slates over the conduit, so as to keep in the vapour. Over this I will leave a space of 6 inches or 8 inches for hot air, which will circulate through the house by means of openings in the brickwork of the sides. Over this I will place thin flags or strong slates to support the bed for the Melons. I will raise the back wall of this bed, so that its surface shall correspond with the inclination of the rafters. In order to obtain still more dry heat I propose [illegible] so that I can drive

[illegible] the hot-air chamber will [illegible] the heated smoke either into iron flues placed in front of the back wall or directly into the chimney.

I hope to have Vines as well as Cucumbers and Melons; but, of course, must keep their stems free from foliage for at least half the length of the rafter. If you think that moist bottom heat will not suffice for Cucumbers, I can have a portion of the house separated from the remainder by a glass partition, and have a dry heat in one part and a general moist heat in the other. You will perceive that I merely want a plain useful house for family purposes, and not for high gardening—one in which I may expect to have Cucumbers, Melons, and Grapes, where plants may be kept in winter, and in which there may be a little early forcing. The ventilation will be by windows on pivots in front, and by shutters also on pivots in the rear: the latter will communicate with an open shed. My questions are—

Is there any reason why Cucumbers and Melons cannot be grown in the same house? I am told that the pollen of the one affects the other injuriously—is it so? If one requires a moister atmosphere than the other would you recommend me to divide the house? Have you any observations to make on the plan generally, however unfavourable?

Perhaps I should mention that the woodwork of the house is nearly complete. The rafters are to be 20 inches part, the glass to extend from rafter to rafter. The reason for my placing the floor so low is, that I take advantage of a pit already made.—N.

[1. With the general features of the plan we have no fault to find, and we are the less disposed to do so, because most people carry out their own designs the best, which is just as it should be. We will, however, give you our thoughts. At first sight the tanks seem to be too deep—a foot or more. This, for a house 34 feet long with two tanks, would give rather much water to be heated by so small a boiler—in fact, you would hardly ever heat it at all; as though 2 inches or 3 inches at the top would be warm, the lower strata would be comparatively cold. We would advise, therefore, that your tanks should be from 4 inches to 6 inches deep.

2. We have no objection to these tanks; they are capital things to work with, but you must ram the ground thoroughly below them, as the least sinking afterwards will cause them to leak. On the score of economy we think that in most cases two pipes all round for bottom heat, and three or four for top heat, would have been as economical, and quite as easily regulated.

3. Both Cucumbers and Melons like a moist heat when growing. The Cucumber relishes a moist heat with fresh air at all times; because the fruit is partaken of as a vegetable in its green state. When it is desirable to ripen its fruit, a drier atmosphere would then be desirable. The dry atmosphere and a bright sun are wanted chiefly by the Melon as its fruit approaches maturity; but though the air is kept drier than usual, and the surface of the soil is kept drier than usual, to give flavour to the fruit, the roots as a whole must not be without moisture, or the fruit might shrivel instead of swell freely to its full size. In "Doings of the Week," therefore, and elsewhere, means are spoken of by which either in frames, pits, or houses, water or moisture may be communicated to the soil below, whilst the surface soil is kept dry.

4. On these accounts then, chiefly, we should advise the dividing of the house, and devoting the one end chiefly to Melons, and the other end to Cucumbers; so that without any trouble you may keep the atmosphere in either end just in the condition that the plants wanted like most at the time.

5. With tanks a foot in depth, and four outside walls exposed instead of three, we consider that for moderate forcing you would have enough of atmospheric heat, provided the sides of these tanks were thin—not thicker than a brick on edge, and at most not more than brick on bed; but with a shallow tank as we propose above, or with your deep tank, as you propose yourself, but with sides shown in the plan fully 9 inches wide, the heat would so ascend to the thin slate above, that you would have plenty of bottom heat, but not enough of top heat to sustain your house in a suitable temperature in early forcing, and therefore the propriety of adopting some such plan as that shown in plan second, for allowing the heat accumulated directly above the slates to get into the atmosphere of the house when desirable. You may help the atmospheric temperature by keeping your tanks a foot deep as you propose, with one brick only on the sides, and then giving them water only 4 inches or 5 inches deep.

6. Again, as recommendatory of the second chamber, unless a great thickness of soil is used, neither Cucumbers nor Melons thrive when their roots come in contact with a hot slate. The second chamber will prevent all that. We should therefore make all the joints of the slate covering the tank pretty tight; and supposing that you had a chamber in both divisions, by opening your slides, and pouring in water on the slates, you could obtain a moist heat in the house; and if the floor of the upper chamber was rather open, the heated vapour would also rise among the soil, which would just suit the Cucumber and Melon too, until the latter was approaching maturity. Then in dull days you could leave the slate dry, and in very bright days you could close your slides after sprinkling the covering of the tank with a little water, to give moist vapour to the roots.

7. A more simple way to regulate all this would be, instead of a second chamber with slides, &c., to put a covering of 6 inches or 8 inches of open rubble over the slate cover, the rubble again covered with washed gravel and a fresh turf every season over that before placing in the soil. Back and front we would have narrow drain-pipes every 3 feet, standing 3 inches above the slates, and a couple of inches at least above the soil, with wooden plugs for their upper end, and through these, when necessary, we should supply moisture to the rubble, and let out heat at top, moist or dry, as might be deemed desirable.

8. Did we grow Melons and Cucumbers in the same division, we would reverse your proposed plan, and have Melons in front instead of at the back, as Melons require more sun to perfect their flavour than Cucumbers do. We have no faith in the pollen of the one affecting the fruit of the other injuriously. If any cross-breeding could take place, it would chiefly affect the seeds—the true fruit, in fact, and not the outside or eatable part of the fruit for that season.

9. We do not place much value on your iron tubes for the smoke; but if you should make them a kind of flue before entering the chimney, you will obtain much heat in the house that otherwise would get out at the chimney top, even though you used a damper most carefully.

10. Considering the position of your pit-house, the arrangement of the raised tanks is admirable; as by placing the boiler at the one corner, you walk round all your beds and stage without the least inconvenience. The great disadvantage, however, is that for such a large general house, the temperature will be nearly equal in all parts, even if you divide it into two by a partition. This will deprive the house of much of its usefulness, as you cannot force on early things, and keep bedding plants in it as you propose. Had circumstances been favourable, the boiler might have been placed in the centre, and heated one house independently of the other. Even now, if there were room enough for a passage-way above the height of the tank, the tank might be carried across in the middle at the end next the boiler, and the circulation in the first half next the boiler made complete in itself. In a cold night the slides could be removed, the others shut, and the circulation continue as now. The one half might thus be devoted to forcing, the other half to merely keeping plants safe from frost. If this could not be conveniently adopted, the first pit with its flower-stage might be shut off by a moveable longitudinal division of wood and glass, and one moveable stoppage and one moveable opening would render the circulation of that part complete. If that was too much, the division next the boiler might be so shut in, which would make a little house some 18 feet by 9 feet or 10 feet, and there, whilst all else was kept as cool as desirable, heat could be given to force flowers and plants, and to sow and bring forward Cucumber and Melon plants, so that there might be successions of them, and some good early Grapes and other fruits might be obtained from pots. In making any such arrangements, wooden sluices for openings or shuttings will answer very well, only care must be taken that the openings extend as much as possible the full width of the tank, as all out-jutting corners in the way of sluices and openings impede the circulation.

So much for this tank-house. Tank-heating seems getting into vogue. We have no right to find fault with such useful things. Had we a house of such a size to make into an *omnium gatherum*, to be used for all kinds of purposes, we would have at least two divisions, and use pipes from a boiler in the centre; at least so as we could heat a part to 60°, whilst we could keep the other at 40°. We have no doubt that the tanks will answer; and bricks, and cement, and slate, may in some places be more easily obtained than pipes.—R. F.]

INSECT IN GREENHOUSE.

I am sadly plagued in my greenhouse with a small white fly, the name of which I know not. It takes possession of the under side of the more delicate leaves, there deposits its eggs, and burrows into the tissue of the leaf, causing it to wither up. I sponge the leaves with soap and water, and occasionally fumigate with tobacco, which, to a certain extent, answers. Is there any other plan I can adopt to get rid of this pest? I enclose a leaf of an Echites with the deposit on the under surface.—Mary Ann.

[The little fly sent is a species of Aleyrodes (a genus allied to Aphis) which has lately become very troublesome in greenhouses, where its greater activity renders it more difficult to master than the sluggish plant-lice. We know of no better remedies than those you have already adopted, which must be persisted in regularly. The leaves most infested with the young must be picked off and burnt.—W.]

AMOUNT OF PIPING REQUIRED FOR HEATING.

House 40 feet by 15 feet, 10 feet at ridge, 6 feet sides, half glass. Span-roof fixed, ventilation at sides, end above door, and in brickwork level with the pipes. House divided in the middle; one end to be used as a stove, the other as a greenhouse. Required what quantity of pipes for the purpose of heating it efficiently. It is built against a stable, in which the boiler will be placed. I propose to have two flows and return in the stove, and one flow and return in the greenhouse, with stopcock at the division. I also propose to use the flue from the furnace to give bottom heat in a chambered pit in the centre of the hot-house.—H. M. K.

[You had better have ventilation also at the ridge of the roof, especially at the greenhouse part. With your flow going through the stove as you propose, two flow-pipes and one return on each side will do for the stove—that is, six pipes in all. In the greenhouse a flow and return on each side—that is, four pipes. They must be four-inch pipes.]

HYDRANGEA CULTURE.

I have a large Hydrangea, which I have failed to bloom. The plant had general greenhouse treatment, and appeared in good health. I have cut the plant down (early in September), and placed it out of doors. The plant broke well, and I have placed it in the greenhouse with the other plants; but I am at a loss whether I ought to repot now, or not until the spring. The plant is in a twelve-inch pot, and appears to be growing well. —John Blacklock.

[You had better leave the plant alone without further potting. If you had still further left it alone, kept it out in the sun in such an autumn as this, neither cut down nor fresh potted, but gave no more water than just kept the leaves from flagging, and, when they became yellow, kept your plant in a cool place, as a stable or a hayloft until April, then set it in the greenhouse or in a warm place out of doors, top-dressed it, and gave it plenty of manure water, we could have almost have guaranteed you plenty of bloom-buds; and when they showed you could then have removed those shoots for which there was no room, or which showed no bloom. If the buds to which you cut down were well ripened you will have plenty of bloom; if not, the bloom will be scant or none at all.]

HEATING A FORCING-PIT.

I am about building a forcing-pit for forcing bulbs and flowers in the greenhouse during the winter months. How could I manage the flue? My present fire-hole to greenhouse is at the south-west corner of the intended forcing-house, both houses will join, both houses face direct south. I want to heat the house and heat the pit in centre. What glass would be best for roof, as my pla[illegible] bad one for the boys throwing stones? I thought [illegible] plate.—T. Tildesly.

[illegible] understand your case, there will be no difficulty [illegible] your greenhouse, we presume, going west, and [illegible] the stoke hole. We presume, however, you mean to have a separate furnace for each. We have worked two flues from one furnace by means of dampers, but it requires some management. If your greenhouse were heated by hot water the pit might be heated by the same boiler.

Hartley's best rough plate will suit well enough, but it will require to be strong indeed to save you from boys throwing. We have little faith in the strong hand with such gentlemen; but if you got a number of the most unruly collected together, spoke to them kindly, and tell them you would be so obliged if they did not throw stones in your garden, and show them your glass, and how easily it was broken and destroyed, the boys' honour thus appealed to will seldom be appealed to in vain. If this would not do, you had better have strong wire netting over the glass, so as to avoid all heartburnings, for these unpleasantnesses there will be every time that a square is smashed. If this does not suit your case send us a rough plan of the relative positions of the two houses.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

Manures to be got out of the framing-ground on to the vacant spaces in the kitchen garden, and immediately afterwards to be dug in. *Artichokes*, cut down any remaining flower-stalks, remove a few of the large outer leaves, and cover the roots with dry litter or old tan; it is a common practice to earth them up with the soil between the plants, but one which we entirely disapprove of. *Beet*, take up the roots carefully, and, having cleared them of leaves, preserve them in sand in the same manner as Carrots. *Broccoli*, the Cape varieties, which are now heading, must be secured from frost. *Carrots*, this crop to be taken up as soon as their leaves change; for when they continue too long in the ground they are apt to get worm-eaten, especially in rich soils. *Cauliflowers*, plant out under hand-glasses five in a patch, taking the precaution to leave room for the hand-glasses to be lifted off and placed between the patches when required. *Chives* to be taken up and replanted every two or three years. Plant them in rich common soil 1 foot apart row from row and 6 inches in the row. *Lettuces*, give air at all favourable opportunities, especially to the young plants; the Cabbage varieties intended for winter use will not need it so much. *Rhubarb*, clear away the decayed leaves, and cover the crowns of the roots with old tan or any sort of loose litter. *Savoys*, plant for the last crop. *Scorzonera* and *Salsafy* to be taken up and stored away in sand.

FLOWER GARDEN.

The laying out of new grounds or improvements in old ones, which may be in contemplation, should now be proceeded with as long as we are favoured with fine open weather. It is too often the case that such operations are left till too late in the season, and are retarded by the frosts and snows of winter, thus interfering with the usual routine of labour during the busy months of spring when attention is required for other matters. Hardy creepers should be examined at this season, and all unnecessary spray removed, and their security from the blasts of winter insured. To obtain a display of spring flowers it is advisable when the flower-beds are cleared of their present inhabitants to plant them with London Pride, Cerastium tomentosum, Heartsease, and Daisies of distinct colours, the Forget-me-not, yellow Alyssum, and the white Arabis. These are common flowers, but if each bed is planted with a distinct colour, either harmoniously or in contrast, they will have a beautiful effect. So beautiful was the effect in April and the early part of May last at Mr. Marcham's Nursery, Earle's Court, that Her Majesty, when passing, was frequently observed to loiter in her progress to admire it. Plant out Wallflowers and Sweet Williams in masses; and if in the shrubbery border let them extend a yard or two in diameter; they will grow anywhere. Take advantage of the present delightful season to finish the planting of evergreen and deciduous shrubs. All large specimens of Holly, Laurel, Yew, Phillyrea, &c., should be planted now, as they will make fresh roots before winter. Have an eye to neatness, so that the borders are cleaned of all dead flowers, leaves, &c., and give them a lively clean appearance by hoeing and raking. The grass edges and walks should be regularly swept while the leaves continue to fall, using the roller at intervals.

FRUIT GARDEN.

[illegible] fruit trees where it is necessary to do so, avoiding deep and highly-manured borders; draining well from stagnant water, and planting high if the situation is naturally wet. The present time is likewise the most favourable for relifting and root-pruning such trees that are too luxuriant, and require checking to induce a fruitful habit. We would, however, prefer lifting the trees entirely (unless they are very large) to cutting off their roots as they stand. After shortening the roots in proportion to the strength of the tree spread them out near the surface, and fill in with compost on which a mulching of half-rotten dung should be spread, to prevent frost from entering the ground. If fruit-tree borders are of a more limited extent, compared with what is generally the case, the trees would be more fruitful, by which the balance between the roots and branches would be more equalised. Put in cuttings of choice Gooseberries and Currants, and make fresh plantations of Raspberries. The pruning of Pears, Plums, and Cherries may be commenced.

STOVE.

Little moisture will suffice at this season. Keep the temperature progressively on the decline, more especially in dull weather. Ventilate freely when the weather will permit.

GREENHOUSE AND CONSERVATORY.

Hyacinths and other bulbs to be procured, and potted without delay. Look sharply after mildew on softwooded Heaths, and dress the plant with sulphur as soon as the enemy is perceived. Tie Azaleas into form as soon as it can be done, to give them a neat appearance. Look sharply after red spider on Bossiaeas, Chorozemas, and other plants that are liable to be attacked by them. Keep Cinerarias cool and moist, and attend to repotting such as require it. Green fly to be banished by fumigation. Primulas also to be carefully attended to.

PITS AND FRAMES.

Where a few Ageratums, Heliotropes, Verbenas, and Lobelias have been kept in pots through the autumn it is unnecessary to winter young stock, as these grow so freely in heat, and are so easily propagated in spring that a few good-sized old plants, which require but little care and attention in winter, will furnish an abundance of plants by bedding-out time. When cuttings can only be procured, get in plenty at once, so as to provide against the risk of being short of stock at turning-out time. Abundance of air and light to be admitted to these structures. If any of the lights afford a partial shade to the plants from the accumulation of filth thereon, take them off and wash them thoroughly without delay. Be careful during the operation of watering to apply it to those only that require it. Remove all mouldy and decaying leaves, and keep the interior as dry as possible during dull foggy weather. W. KEANE.

DOINGS OF THE LAST WEEK.

STRANGE that with the tidings of deluges of rain, with the exception of a slight shower or two to refresh the surface, the dry weather still continues here (Luton), and farmers in some places can scarcely manage to plough or sow, though no better opportunity can be given for thoroughly cleaning the land where ploughed. The beginning of the week has been marked with all the brilliancy of a July sun, and the close warmth was even more oppressive.

FIGS.

The second crop of Figs in the house, with just a touch of fire heat have swelled off to great perfection, and I hope all will be gone before the end of the month, to let the plants have a rest in winter. The late ones in pots taken from a cold glass case into a pit, where a little extra heat can be given, are swelling nicely. Have proved that Rivers' Marseilles White is a distinct sort from the common kind, being as distinguished for fertility as the other is the reverse. The finest crop of the common I saw on a wall out of doors; but though I had cuttings from it, I never was satisfied with it under glass, for though I could get some good fruit, I never could depend on getting a good dish or a basket of it at a time.

This sunny weather must help the ripening of all fruit, and the wood of fruit trees, so that we hope the next season will be better than the last and present.

KITCHEN GARDEN.

Pricked out Cauliflowers as previously stated; protected late crops of Dwarf Kidney Beans at night; gathered more Tomatoes and Capsicums; made fresh beds of Sage struck under hand-lights, and of many other herbs, as Pennyroyal, Mints of sorts, Sorrel, Fennel, Thyme by slips, beginning to root at their base and such like, as young plants now turned out will generally stand the winter better than older plants. Earthed up the first spring Cabbages as a protection against frost. Will lay down Broccoli in a week or so; and where *Cauliflower* is now coming in plentifully and faster than can be used, would recommend the stems being cut over level with, or a little below, the surface of the ground, and the leaves all removed except two or three small ones close to the head, and then the stems fixed in earth neither wet nor dry, but approaching the former—a shed dark rather than otherwise, but with the means of giving air. A dry cellar would do for the purpose. The heads should be firm, not begun to open at all, and if not much more than half grown the heads should be just as close as not to touch each other. The sand or earth a little damp at the bottom of the stem will enable the stem to absorb enough of moisture to keep the head fresh; and, under such circumstances, where a suitable place can be provided for them, Cauliflowers will be kept fresh for several months, when out of doors they would be all destroyed. A little air is necessary at all times, unless when there is frost, to keep the heads from damping.

FRUIT GARDEN.

Much the same as last week, doing everything to help the ripening of the wood. Gathered, too, most of the Apples and Pears, which are now pretty well fit for housing; and even the later kinds suffer less from being gathered a few days too early, than from getting a touch of frost. If much frosted they will often keep and recover themselves better when left to lie among fallen leaves than when they are placed in store-rooms or fruit-rooms. Run the hoe again through Strawberry-rows out of doors, and though warm will give no water to *Strawberry-pots* until the leaves show signs of distress by flagging. This sun with a dryish soil will insure the ripening of the buds. If the leaves were allowed to flag much, there is danger that the embryo fruit-bud would be shrivelled up. Extra dryness and extra moisture are alike to be avoided now.

ORNAMENTAL-HOUSES.

See what was said last week by Mr. Keene on Orchids and stove plants generally. Have cleared out the conservatory greenhouse, cut back the climbers, which look so beautiful in summer, but which would make the house dark in winter, leaving only the main shoots, and a summer sprig dangling here and there, just to give an air of lightness to the house. Washed the glass and all shelves and woodwork thoroughly. Run the paint-brush over all, to make everything sweet and clean, and in a day or two will fill with Azaleas, Camellias, Cytisuses, Epacrises, Cinerarias, Primulas, &c., the most of which are now clean as respects pots, &c., and under protection from heavy rains or boisterous winds. Potted succession Cinerarias into size 24 and 16-pots, many of the forwardest being left to bloom in 32's, where, however they will need a good deal of water.

FLOWER GARDEN.

We hardly know what to do here, as the change of the wind to the east and north presages a little frost before long, though now Scarlet Geraniums, Salvias, and, above all, the orange Cassia corymbosa, as large specimens, are as fine, nay finer, than in August. We may say the same of Brugmansias planted out, which are now splendid. But a few degrees of frost injure them so much for another season, that ere long these and many other things used as high centres must be got up with the spade and the fork, and with as much roots as possible, be crammed into the smallest pot that will hold their roots, and be placed in some shady shed at first until the roots begin to move afresh. Talk of room! Why there is not one of us but would sing out for a village of room now if we saw any chance of getting it. After the 16th and 18th we hardly think it worth while to put in cuttings, except some things of great importance, and we can give them both top and bottom heat. In case frost may happen, we have taken up Golden Chain *Geraniums* to-day, and will follow with Flower of the Day, Bijou, Alma, and other variegated ones, placing them merely in a shed with the roots kept a little moist until we get more time to clean them, regulate them, or pot or box them. The stronger kinds after removing the leaves and softest points we will pack firmly in earth, in pots or boxes, putting them as close as possible together, and then watering them. When the water has subsided, and the surface just begins to be dry, we will cover all the surface to the depth of an inch or two with dry soil mixed with an equal portion of charred rubbish-heap now charring, and which to prevent burning into ashes we must open and spread out to-day or to-morrow. There is no end to the uses of such a charred heap. I never have enough of it, even though I get a good many loads in a season. After this, covering the pots with dry soil, they will, in general, get no more water for the winter.—R. F.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Training Peaches, &c., en Cordon (*A Subscriber*).—We believe that the Rev. T. M. Bréhaut, of Richmond House, Guernsey, author of the book on cordon training, practises the method on Peach trees against his walls in the open air.

Lapageria Culture (*F. W.*).—If you buy our No. 575, you will find in it a full epitome of its culture.

Liquid Manure (*J. W. D.*).—Liquid manure is best applied to grass land by a water-cart, somewhat like that used for street-watering. The best time for applying it is in early spring. To garden crops apply it during their chief growing period. It is beneficial to all fruit trees that are not over-luxuriant. If the sewage is very rich, it will bear mixing with water.

Various (*G. L.*).—All hardy plants will live out of doors without protection. Arabis is one of them. Calceolarias taken up from beds are best if not cut at all. The best method to keep Geraniums, is to cut down Scarlet Geraniums like Pelargoniums when they are taken up in October, and to give them two months' bottom heat of 70°, in a top heat of 50°. But all depends upon what places a man has for keeping plants throughout the year. When we know this we say which would be the most likely best way for him to do; not the best way for any one else beside himself. Variegated Geraniums are more liable to mishaps in winter than plain and horseshoe kinds of equal strength.

Improving Garden Soil (*B. W.*).—The portion that is loamy, but exhausted, merely trench and manure with superphosphate of lime, and gas ammoniacal liquor, with sulphuric acid added. These to be added to the soil during the growing season of the crops—the trenching to be done at once. Of the clayey portion of your soil, burn a spit's depth of the entire surface, and incorporate the ashes with the soil beneath, and manure with bone dust and ammoniacal liquor. The gravelly portion of your soil trench two spades deep; sift out all the stones more than half an inch in diameter; then cover it with 3 inches of clay from your clayey portion; and manure with half-inch bones, superphosphate of lime, and the gas ammoniacal liquor. The latter always to be given to the crop whilst growing—that is, in spring and summer.

Grapes (*P. Brentwood*).—If you are a Fellow of the Royal Horticultural Society, you can get cuttings of the Jura Frontignan Grape from the Garden by the usual form of application. We do not know where else it can be obtained, as it has not been advertised in our pages. The Sarbelle Muscat is a good Grape for pot culture. It is not noticed in Dr. Hogg's "Fruit Manual," because at the time that was in preparation Sarbelle Muscat had not been sufficiently tried in this country, and its merits were not known. This and a great many more new fruits will appear in the new edition, which is in the course of preparation. La Constante Strawberry may be had of several of the trade, but we cannot recommend any particular one. Apply to those whose advertisements you find in our columns.

Work on Gardening (*W.*).—Buy "The Garden Manual," published at our office, price 1*s.* 6*d.* It contains all the information you say you need as "an amateur and beginner."

Ground Vinery (*J. L.*).—If you will buy our No. 633, you will find every particular about the dimensions. It is too long to extract. You can have it for four postage stamps from our office. The only difference now s, that Mr. Rivers does not dig a trench. (*W. I. L.*).—You will see our eply to the above query. The dimensions are also stated at page 55 f our last Number. (*H. S.*).—Grapes will ripen in these structures in any mmer that would ripen them in a greenhouse, unless the summer and il be wet. They have been tested more than one year. There is no ork devoted to the stages and other fittings of greenhouses. There are me at page 393, and other pages of the first volume of McIntosh's "Book [illegible]arden."

[illegible]g Tropæolum (*W. Foster*).—The flowers not equal to many in ltivation. Even if superior we could say nothing of its worth, for this ends upon the dwarf habit of the plant.

rrigation in Winter (*T. Jms*).—Your gardener is quite right. The igation [illegible]ll be very beneficial to all your garden crops and tree[illegible] whilst wing i[illegible] pring and [illegible] t in win[illegible] [illegible]

Names of Fruit (*W. H. H.*).—It is the Downton Imperatrice. We quite agree with you in feeling the vexation of having a wrong variety sent. If nurserymen were actionable for such mistakes, we should hear less of them. (*G. A.*)—The Muscat Muscadine Grape is the Chasselas Musqué.

Daisies in a Lawn (*J. E. S.*).—There is no way of eradicating them except by having them scooped out by a knife, or spud. Two or three women we have known clear a large lawn in a few days. The bare places are soon covered by the grass.

Protecting Blossoms of Dwarf Fruit Trees (*Silly Suffolk*).—Tiffany has been employed successfully for the purpose, and is certainly the cheapest and most durable material. It admits enough light.

Quickly-growing Trees (*Dorset Subscriber*).—The most eligible for your belt is the Black Poplar. We have had it grow to the height of 30 feet in seven years. Of evergreen trees, as you are not far from the sea, plant Pinus maritima. October is the best of months for planting. You justly complain of the absurdly long names given to florists' flowers. "Madame Marquise d'Arillieme" given to the Verbena is superlatively absurd.

Insects (*F. H. Law*).—The specimens enclosed are of *Julus pulchellus*, one of the Snake Millipedes. No application to the soil seems to affect them. We doubt if they attack any vegetable until it has begun to decay. If we entertained a different opinion, and were resolved to rid our soil of them, we would pare off 3 inches in depth of the surface and burn it.

Insect on Dahlias (*H. B. B.*).—The insect found on Dahlias is one of the field bugs, Capsus pabulinus. It is not peculiarly attached to that plant.—W.

Euphorbia Jacquiniæflora Culture (*B. N.*).—Do not touch your Euphorbia now; wait until it has given you its beautiful flowers. Then allow the soil to get a little dry; then prune back and syringe a little; and then water after the buds begin to break; and fresh pot in loam, peat, or heath soil, and a little broken bricks and lime rubbish. It likes plenty of heat when growing, and plenty of sun in August and September.

Names of Plants (*H. B. Biden*).—It is the good old Vallota purpurea. (*J. R. W.*).—Yes, it is Lastræa dilatata.

FLOWER SHOWS FOR 1861.

November 6th and 7th. Royal Horticultural Society. (Fruit and Chrysanthemums.) *Garden Superintendent*, G. Eyles.

November 12th and 13th. Stoke Newington Chrysanthemum Society. *Sec.*, W. T. Howe.

November 14th and 15th. Crystal Palace. (Chrysanthemum Show.) *Sec.*, W. Houghton.

N.B.—*Secretaries of Societies intending to advertise in our columns will oblige us by sending an early intimation of their exhibition days.*

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE MOTHER OF POULTRY SHOWS.

We could not but be amused, when passing through one of the suburbs of London, to see in a little old shop in a narrow street an announcement that Flint & Brick had begun their "Christmas club," and that the payment of a very small weekly sum would enable to participate in the distribution, during the Christmas week, of the heaps of raisins and currants, the mounds of citron and orange peel, oranges, nutmegs, and all sorts of edible temptations that were being rolled into a heap by some very black men out of such large cornucopiæ, all marked "Flint & Brick," that the marvel was how they moved them. It was a little shop with a descent of two steps to get into it; it was redolent of tallow and kitchen stuff; and if we were subscribers we should in claiming our prize follow out the advice of F. & B. in putting down our names, we should apply early. As we thought of this we were obliged to admit it was the real Anglo-Saxon pushing on, and those who have little to help themselves with, and nothing but themselves to depend upon, stride to the best of their ability. They every now and then, while in pursuit of those who have set the example, get near enough to them to make themselves heard, and to remind them pioneers must be in the front. The positions change at times—a forward man falls, and the gap is filled up from behind. The two classes form the history of life, and while the front point out the way to those behind, these keep the front from wavering or falling away.

In front of Somerset House every afternoon may be seen a very old horse, mounted by a very old groom, walking up and down till the clock strikes, and an old gentleman comes out; the servant touches his hat, the horse looks round, the old gentleman takes his whip and the reins, and audibly says, "Thank you, Charles," when the old groom has pulled his coat tails from under him. We know not why it should be that there is perpetual war between clerks (especially in Somerset House), and those who have to do with them in business; but it is certain it oes exist. Now, no feeling of the sort could be entertained gainst the old gentleman in question. He had lived long enough o see ho[illegible] preferab[illegible] o lessen rather than increase the [illegible] and as he patted the neck of his old horse, which immediately attempted to trot, to the manifest delight of the groom, any one could feel how respectable their age made them, and every one felt disposed to admire and like them. A carefully-folded light coat or macintosh strapped across the front of the saddle spoke of olden times. All looked kindly, prosperous, and like a good balance at the bankers; the very look of the *ensemble* would have justified a stranger in cashing a heavy cheque. If on inquiry all our opinion was found to be justified, and he proved twice as good as respectable, as punctual, as opulent, as we believed him to be, he would then be among men what the Birmingham Show is among amateurs.

It is customary for the directors of railways to advertise that no applications for shares can be received after a certain day; so it is necessary there should be a last day for entering birds for competition. It is therefore our duty to remind our readers the time is come when those who mean to try for the "blue ribands" of the poultry world, should signify their intention to the Secretary. We are informed on excellent authority the entries bid fair to be unusually numerous, and that the Show will in all probability eclipse all its predecessors. We confess to a great *penchant* for this Mother of Shows; for, although if we go to the first of all poultry exhibitions, we must find it in the gardens of the Zoological Society of London, yet the first Society that was formed on a large scale, and that feared not to invest thousands without any other certain return than a show of stock during five days, was that of "Birmingham and the Midland Counties." Its originators felt they possessed the qualities that are necessary to success, and they were also aware they could persevere in the practice of them. The event has justified their confidence; and we believe they will this year meet their friends and subscribers in better circumstances than they have ever done. We heartily congratulate them on it. Their perseverance, uniform straightforwardness, painstaking, disinterestedness, and punctuality deserved no less. We conclude by reminding our friends who are exhibitors that their entries *must* now be made. We invite them to fill up their papers for that purpose, and our Number must be to them what Flint and Brick's announcement in their window was to the passers-by. We also invite all who have never seen this unique sight to go to Bingley Hall. Those who have been once are sure to go again.

TRAVELLING-BASKETS—POINTS IN SILVER SPANGLED HAMBURGH COCK.

I SHALL be obliged if you will tell me in your next Number, if the round baskets used in sending poultry to exhibitions should be made with open wicker-work at the side and canvass run through the bars, or close wicker-work lined with canvass, and should it have a wicker cover, or is the canvass considered sufficient protection?

Has a thoroughly good Silver-spangled Hamburgh cock a pure white tail with black tips, or may the feathers be slightly stained on the under side?—B.

[The baskets in which to send poultry to exhibitions should be of close wicker-work all round; they may be lined inside, but it is not necessary. If they are made very high, the top may also be of wicker-work. Double canvass is, however, sufficient protection.

A thoroughly good Silver-spangled Hamburgh cock should have a perfectly white tail, save at the tips of the feathers, which should be mooned with black.]

FROME POULTRY SHOW.

THE Poultry Show in connection with the Frome Agricul-ural Society was held in a field, kindly lent for the occasion by . Linkins, Esq., on Wednesday last; and, although in conse-uence of the limited classification of the prize list, and exhibitors o be residents within fifteen miles of Frome, the entries were ot so numerous as on a former occasion, yet amongst them ere to be found several good pens. Those most worthy of otice being Mr. R. Elling's *Game*, and but for a rule pro-ibiting one exhibitor taking both first and second prize in a lass, there is but little doubt but this gentleman would have one so, as his pen of Black Reds were far superior to the econd-prize pen; and the same rule which prevented Mr. Elling aking both the Game prizes, also prevented the Marquis of Bath aking a clean sweep of the *Dorking* prizes, as his lordship exhibited two remarkably fine pens of chickens. *Spanish* and Silver-pencilled *Hamburghs* were of inferior quality; but *Ducks* made amends, as they were both numerous and good, especially Mr. Smith's Aylesbury, and Mr. Ponting's Rouens. Miss Millward obtained first prize for *Turkeys* with a fine pair of Black. In the extra class the Marquis of Bath exhibited a fine pen of *Brahma* chickens; there was also a pretty pen of white *Bantams*. There is but little doubt that with a few alterations in their rules, &c., revision and extension of their prize list, the Frome Agricultural Society may establish a good poultry show; but like most agricultural societies, they seem to look upon the poultry department as a drag to their progress rather than as an additional attraction which they might make it, and which, in point of fact, it now is, as might have been seen by the difficulty to get to the pens during the whole day.

GAME.—First (the gift of the Countess of Cork), R. Elling, Sutton Parva. Second (given by the Society), L. C. Irons, Upton Scudamore. Commended, R. Elling, Sutton Parva; F. J. Sanford.

DORKINGS.—First (the gift of the Countess of Cork), Marquis of Bath Longleat. Second (given by the Society), Miss Wilcox. Commended, Mrs. Knatchbull, Babington; Marquis of Bath, Longleat.

SPANISH.—First (the gift of the Countess of Cork), withheld. Second, (given by the Society), Mrs. Morgan, Berkley.

HAMBURGHS (Silver-pencilled).—Prize (the gift of the Countess of Cork), R. Porteous, Marston.

DUCKS.—First (the gift of the Countess of Cork), T. Smith, Westbury, Second (given by the Society), E. Ponting, Whatley. Commended, Mrs. Knatchbull, Babington; Marquis of Bath, Longleat.

GEESE.—First, S. Giblett, Bollow Farm. Second, I. Cox, Whatley.

TURKEYS.—First, Miss J. Millward, Newton St. Loe. Second, E. P. Sly, Thoulstone. Commended, Miss L. Ponting, Whatley; C. Hatch, Marston.

EXTRA STOCK.

GAME.—Prize, R. Elling, Sutton Parva.

BRAHMA POOTRA.—Prize, Marquis of Bath, Longleat.

BANTAMS.—Prize, Mr. Pickford, Frome.

Mr. George Saunders Sainbury, of Rowde, Devizes, was the Judge of poultry.

RATE OF GROWTH IN POULTRY.

"*G. T.*" complains of the slow growth of his Dorking chickens compared with his Hamburghs. The reason is plain. The larger the bird the longer it is in attaining its growth. We some time since had a broody hen; we had no eggs we cared to put under her, but tired of her pertinacity, and pitying her for the pains she took to sit on nothing, we put under her one Pea fowl's egg, and four Cochin's. She hatched the former and two of the latter. They are now about two months old; but the Cochins are much larger than the Pea chick, and the difference becomes more marked every day. The Cochins will attain their growth in six months; the Pea fowl in ten or twelve.

THE BIRMINGHAM CATTLE AND POULTRY SHOW.

THE poultry prize lists have this year undergone a complete revision, and we are gratified to find that the changes which have been made have been perfectly satisfactory to the exhibitors. One of the most important alterations is that by which the number of hens or pullets in a pen is limited to two, instead of three as heretofore; and this new regulation may be expected to find favour with purchasers. No silver cups are offered this year by the Society, but the prizes are in several classes increased in amount, and the total sum to be competed for in this division considerably exceeds that which has been given in any former year. For instance, the prizes in the four general classes of Dorkings (Silver Grey, and other coloured Dorkings) are now in each case fixed at £5, £3, £2, and £1; and the same is the case in the two classes for Spanish fowls. The prizes for Game fowls have also been increased, and a class is opened for Browns and other Reds except Black-breasted, the latter being very properly shown separately—a change which has been made at the request of some of the leading exhibitors of these varieties. We have not space to enumerate all the alterations which have been made, but must refer exhibitors to the lists themselves. To this department of the Show we are gratified to state there have been contributed four special prizes, each of the value of five guineas, the first by Mr. Martin Billing for the best pen of Dorkings; the second by Mr. Henry Wade, of the Electric Telegraph Company, for the best pen of Cinnamon or Buff Cochin-China fowls (cock and two hens); the third by Mr.

James Cattell for the best pen of chickens of the same variety; and the fourth by Mr. G. F. Greensill for the best pen of Game fowls.

It is at present too early to form an opinion as to the extent and character of the approaching Exhibition, but it is already known that a number of breeders and feeders of stock who have not hitherto taken part in the competitions in Bingley Hall, will send stock this year, while as regards the older members of the Society we do not expect that there will be many absent. This will be the thirteenth Exhibition held in Birmingham, and it is certain that the interest felt in these useful and pleasant gatherings suffers no diminution, but seems rather to increase from year to year as the practical objects which the Council seek to promote become more distinctly apparent.—(*Midland Counties Herald.*)

TUMBLING PIGEONS.

No doubt the readers of your Journal may remember the accounts given by Mr. Paton and "HANDY ANDY" some time back, respecting the Scotch House and Air Tumblers and the Birmingham Rollers. The statements then published of the excessive tumbling of those birds greatly astonished me, and I was much delighted to accept some of the varieties above mentioned, and was surprised to find that those statements were not at all exaggerated. As I have bred several pairs of these birds, I thought an account of their mode of tumbling might interest some of your readers. I enclose you the following remarks:—

The Birmingham Rollers, or at least those I had sent me, are coarse, common-looking birds of various patchy colours, mostly like a very foul-feathered Baldhead, and that seems to be generally red, or as it is termed, a "red badge." Their eyes seem to be as often "bull" or "mud" coloured, as they are pearl; the feet unfeathered, and the beaks long—altogether a very mongrel-looking set. But we must not always judge by appearances. At first sight I really thought the birds had been changed—they could not be Tumblers; but when once they were let out there was no mistake. Their tumbling is extraordinary. Every few seconds over they go, one, two, or three summersaults at a time. Here and there a bird gives a very quick and rapid spin, revolving like a wheel, though they sometimes lose their balance, and make a rather ungraceful fall, in which they occasionally hurt themselves by striking some object. I manage to make most of mine fly for an hour a-day, but their excessive tumbling fatigues them much.

The House and Air Tumblers are a Scotch variety. I do not know if they are descended from the Indian Ground Tumblers; but certainly some of them are scarcely able to fly on account of their excessive tumbling.

In comparison to the Short-face Tumblers they are certainly coarse in appearance; yet they have all the features of common Tumblers, and their eyes are mostly pearl. In plumage they are very various; many whole-coloured, some pretty good mottles, but mostly red, with a few white feathers.

In tumbling there is much diversity of style. They generally begin almost as soon as they can well fly; at three months old they tumble well, but still fly strong; at five or six months they tumble excessively; and in the second year they mostly give up flying on account of their tumbling so much, and so close to the ground. Some fly round with the flight, throwing a clean summersault every few yards, till they are obliged to settle from giddiness and exhaustion. These are called Air Tumblers, and they commonly throw from twenty to thirty summersaults in a minute, each clear and clean. I have one red cock that I have on two or three occasions timed by my watch, and counted forty summersaults in the minute. Others tumble differently. At first they throw a single summersault; then it is doubled till it becomes a continuous roll, which puts an end to flying, for if they fly a few yards over they go, and roll till they reach the ground. Thus I had one kill herself, and another broke his leg. Many of them turn over only a few inches from the ground, and will tumble two or three times in flying across their loft. These are called House Tumblers, from tumbling in the house.

I have a pretty good flight of young ones still capable of flying their hour daily, of which in a few months' time few will be safe to trust out on a windy day. When on the earth they often make many unsuccessful attempts to reach the roof. [illegible] their tumbling [illegible] which they have no control—an involuntary movement which they seem to try to prevent; as I have seen a bird sometimes in his struggles fly a yard or two straight upwards, the impulse forcing him backwards while he struggles to go forwards. If suddenly startled, or in a strange place, they seem less able to fly than if quiet in their accustomed loft.—B. P. BRENT, *Dallington, Sussex.*

COCHIN-CHINAS AT WORCESTER SHOW.—The pen of Cochins with which Mr. Tudman took the first prize at Worcester, was not (as stated in our report) claimed by Mr. Tudman at the Crystal Palace in August last.

ASTHMATIC CANARY.

SOAK some bread in hot water, then squeeze and drain the water off and pour a little milk on, this also drain off, and then give this soft bread to the bird, and let him eat as much as he will for a week or fortnight, and at the same time, or every third day, for a change, give him some bread-crumbs (dry), and some yolk of an egg chopped fine; groundsel, of course, or lettuce or watercress, and cleaned and gravelled daily. With this treatment the bird will be well and singing in fourteen days, and, if not singing, rapidly improving. The writer has had two valuable birds also songless nearly twelve months, and this treatment in six days has already brought one to sing, and the other is improved.—T. G. H.

IS THE FEMALE BOMBUS FERTILISED IN THE AIR?

WOULD Col. Newman, who has so carefully attended to the habits of humble bees, have the kindness to state whether the queen humble bees are fertilised in the air or on the ground? I have a special reason for wishing to know this little fact, and whether the fertilisation does not often take place as late as September?—C. DARWIN.

[The queens or females of the humble bees are not fertilised in the air, and the act of fertilisation takes place either in the nest or on some flower, or on the ground.

I have made observations, more or less, since the year 17[illegible], and give the result—scarcely half a dozen instances in sixty years.

1st. I have seen one couple come out of the nest of the *Bombus terrestris*; these flew away instantly, and were united until I lost sight of them.

2nd. I observed one male and a female come out of the nest of the *Bombus lucorum*, they separated near the entrance of the nest in the earth. The male was unable to fly, I examined him and found evident signs of recent connection.

3rd. The best view I ever had was at Upton Hall, in Northamptonshire, where I saw a male come to a young queen which was busy on a flower; they clung together, and went about 10 yards to another flower, and I watched these for about ten minutes until they separated; the male continued united during their flight, and both used their wings apparently with great ease.

4th. I saw a couple of the *B. hortorum* on a flower, and watched them until they separated; they took one flight and separated in about seven minutes from the time I saw them first. All these cases were in the month of August.

5th. The next case was of the *B. muscorum*. I watched a male of the *B. muscorum* among some long grass—at first I thought it was coming out or going into its nest, but on going very near I observed the bee alight near a young female of the same species, and after showing signs of kindness they flew off in union, but so rapidly that I could not follow to observe them again; this last was about the first week in September. The *B. muscorum* is the latest in appearing and the latest in nidification. I have seen nests of the *B. muscorum* as late as the last week in August, when the combs contained unhatched drones; and the latter almost always hatched before the young queens.

WASPS.—I have never except once observed the fertilisation of the wasp near Thornbury. On the 7th of September, 18[illegible], I was walking with my bailiff, Mr. Cossham, of Thornbury, when we saw a curious long-looking insect about 20 feet in the air; on its coming very near (it was gradually descending) it proved to be a male and female wasp united. Each of the wasps [illegible] different direction. They fall to the ground, and I immediately crushed them both so as to kill them, but not to mutilate them at all. I had them carefully packed and sent to the Committee of the Entomological Society, in London, directed to their Secretary; but as ill luck would have it, the box was intercepted by some letter-carrier or other person, and never reached its destination. The queen wasp was more than double the size of the male.—H. W. Newman, *late Lieut.-Col. (Commandant) the South Gloucester Militia, Hillside, Cheltenham.*

N.B.—In late seasons such as 1816 and 1860, and in a few springs such as May, 1837-1838, I have noticed nearly one month difference in the hatching of the drones or male Bombi, and I have no hesitation in saying that the fertilising of the young queens, particularly of the *B. muscorum* may be retarded until the second week in September.

DRONE INFLUENCE.

Whilst driving a condemned stock of bees to-day (Oct. 9th), I found very many of them well-marked Ligurians. The hive contained a second swarm, and was one of four stocks and swarms standing at a distance of a mile and a half from my apiary, which is, as far as I know, the only apiary in the county of Devon containing Ligurian drones. There is, therefore, no doubt that the queen has been hybridised by one of my drones, and it is my intention to present her to "A Renfrewshire Bee-keeper," who will I hope report her adventures in due course to the readers of The Journal of Horticulture.—A Devonshire Bee-keeper.

PARTHENOGENESIS IN THE HONEY BEE.

The account of the investigations of the German naturalists, and the wonderful revelations of the microscope so kindly furnished by the "Devonshire Bee-keeper," may well seem to establish the fact of true parthenogenesis in the honey bee; yet there is a feeling of regret that the opportunity afforded of applying the test was lost by removing the queen whose wings were undeveloped. I may appear prejudiced or sceptical when I say that surely she would, impelled by her instinct about the fourth day of her age, have sought the open air, traversed the alighting-board, and fallen to the ground never to rise again. Such was the fate of a young queen in one of my hives, one of whose wings was imperfect, and which I supposed had been mutilated in the struggle for pre-eminence. On the other hand, it may be argued, if the wings are naturally defective when the insect is hatched, such is the extreme delicacy in the organisation of the queen bee, that her instinct might be impaired in a corresponding degree.

It is, however, quite certain that queens which produce the eggs of drones only are usually found in external appearance to be quite perfect. A queen has been known to exist many months without laying any eggs whatever, and, it was supposed, would have remained sterile. Such an instance occurred in the apiary of a very intelligent and experienced bee-keeper, whose bees enjoyed the advantages of the heather, and were in consequence in full activity late in autumn. Perhaps a solitary instance such as this may be regarded rather as the exception which proves the rule, or it may possibly point to some hidden truth.

That fecundation is sometimes repeated was not overlooked by Huber, though he alludes to it only in a casual manner. I once found it occur in my apiary. A queen which I had reared artificially in August was fecundated on the ninth day.* Forty-eight hours afterwards, when I [illegible]ratulating myself on the reduced numbers of the colo[illegible]g about to be replenished, I was not a little surprised [illegible] see the queen again leave the hive. She continued her excursions four days, and then returned fecundated.

I believe few bee-keepers are aware of the frequency of these excursions. With this queen it was very remarkable. As I have not my notes to refer to I cannot be certain of the exact number of times she left the hive, but it was more than thirty. The weather was favourable, and drones had become scarce. She was of small size, and I did not remark that she became much distended during this period, and she proved an excellent queen. I have sometimes observed the workers worry at the drones while the queen was still going out; but they did not appear to disable them, only to give a rough hint that it was only by sufferance for a little while that they were allowed to live at ease, or I thought perhaps some of the drones were becoming old and feeble. I should like to know if the drones of the defective queen were destroyed or only bullied, also the age of the queen when she was removed.

How valuable the Ligurians will be for making experiments! but how impossible to sacrifice such treasures! The raising of artificial queens and forming artificial swarms are sad impediments to the ordinary labours of the hive, and it fills one with wonder to hear of the fruit of their labours. Is it to be understood that the ten families which have proceeded from one stock are sufficiently strong to be reserved over the winter? I presume they have been furnished with combs and supplied with food.—Investigator.

THE QUEEN BEE.

A VIRGIN QUEEN CAN UNDOUBTEDLY BREED DRONES.

When I wrote the reply to "Investigator," which appeared in The Journal of Horticulture of the 17th ult., I was only able to describe the difference which was apparent to the naked eye between the spermatheca or seminal reservoir of a virgin, and that of an impregnated queen bee. Since that time I am indebted to the skill and kindness of Mr. J. U. Huxley, the talented house surgeon of the Devon and Exeter Hospital, for the opportunity of verifying and confirming, by means of the microscope, some of the statements made by Siebold, the distinguished German naturalist, and ultimately of establishing beyond question the fact that a drone-breeding queen is a virgin queen.

Mr. Huxley first dissected out and then punctured the spermatheca of a fertile queen, and having extravasated some portion of its contents placed it under the microscope. It immediately became evident that the spermatheca contained countless thousands of lively spermatozoa, consisting of slender filaments which rotated, turned, and twisted with inconceivable rapidity. For some time the movements and contortions of this animated mass of delicate filaments were so amazingly swift, that we found it impossible for the eye so to separate a single spertazoon from its fellows, as to follow its movements or to detect either of its ends, which gradually tapered off to such an extreme degree of tenuity that it appeared almost impossible to detect where it either began or ended. After the lapse of from a quarter to half an hour the rapidity of their movements was so far diminished that we were able to perceive that these spermatozoa consisted of thread-like filaments tapering at both ends and entirely unconnected with each other.

The next proceeding was to dissect out the vesiculæ seminales, or seminal receptacles of a drone, and having punctured one of these and submitted its contents to examination in the microscope, we were soon able to detect the presence of similar spermatozoa to those found in the queen, thus proving beyond all question the identity of the contents of the spermatheca of an impregnated queen bee with the semen of the drone.

At this point our investigation must have terminated, but for the unsolicited kindness of Mr. J. E. Briscoe, of Albrighton, near Wolverhampton, who on the 12th inst. forwarded to me by post a living queen which had never laid any but drone eggs, with a request that I would ascertain by dissection whether she still remained a virgin. Here, then, was the very thing which we required, and it will readily be imagined with what cautious eagerness I dissected out the spermatheca preparatory to submitting its contents to the test of the microscope. The result was exactly what I anticipated. The contents of the spermatheca turned out to be a limpid, colourless fluid as clear as crystal, and in which the highest microscopic power failed to detect the faintest trace of those lively spermatozoa which were found in such countless multitudes in an impregnated queen.

These investigations establish the fact that a virgin queen is capable of laying eggs which will hatch into drones, and place the correctness of Dzierzon's theory beyond cavil. In order that no link in the chain of evidence may be wanting, I append the history of the drone-breeding queen in Mr. Briscoe's own words.—A Devonshire Bee-keeper.

"Wolverhampton, October 16th, 1861.

"Dear Sir,—I will briefly give the history of the queen I sent you from my book of memoranda taken at the time:—

"June 15.—6.30 a.m., removed queen from box No. 4.

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* After an absence of fifty-eight minutes.

"June 29.—Heard hoarse piping, the eldest of the young queens not having obtained her liberty.

"June 30.—Shrill piping commenced.

"July 1.—No. 4 swarmed at 10 A.M. In the evening joined part of the swarm to another swarm hived on the 20th of June, box No. 3, and having captured one queen, put her with a small quantity of bees (perhaps three pints) into a mirror-hive, of the dimensions recommended in "The Honey Bee," by Dr. Bevan.

"Next morning I caught a second queen, which had also come off with the swarm on the 1st, but had remained with a cluster of bees under the floor-board of No. 3, after the bulk of the bees had entered the box. This queen I also put into the mirror-hive, being apparently a larger and stronger insect than the one first captured. One of these queens (the smaller one I believe) was cast out the same evening. The survivor is the one I forwarded you for examination, and I account for her virginity in the following way:—

"Firstly. The weather was for more than a month very unsettled.

"Secondly. The number of bees was small, and on account of the bad weather made comb very slowly, so that they never occupied more than one side of the hive, and the comb even on that side has never been brought to within 5 inches or 6 inches of the bottom.

"Thirdly. The passage out of the hive is very narrow, although quite sufficient to allow free ingress and egress for the workers.

"The queen did not lay any eggs until the beginning of August, when I commenced to feed the hive, and I soon suspected (what turned out to be the case)—*i. e.*, that she was only laying drone eggs, as the bees prolonged the cells (all worker-cells) beyond the level of the comb. At the same time she did not lay with the same uniform regularity as an impregnated queen, but deposited her eggs in somewhat isolated groups. Her wings were perfect as she led out the swarm, and two of her sister queens—*i. e.*, the one left in the old hive, No. 4, and another I caught and put into an ordinary bar-hive, were duly impregnated.

"I never saw the doctrine of parthenogenesis advocated until I read your able article in THE JOURNAL OF HORTICULTURE, on the subject which seemed so strongly supported by such irresistible evidence that it at once convinced me of the truth of the theory. Had I possessed the information sooner in the season I should certainly have endeavoured to raise young queens from my Ligurian stock to put at the heads of my other hives, for the purpose of increasing the chance of genuine impregnation of the young Italian queens next season, which, as the Italian hive contained scarcely any drones, could have little chance of being accomplished this season.

"Yours very truly,

"J. E. BRISCOE."

UNITING BEES.

YOUR correspondent "A. W.'s" surmise, at page 38, as to what would result from the juncture of his old Ligurian stock and swarm, is much nearer the mark than the reply, which, surely, must be some slip of the pen.

Any one at all acquainted with the storifying system knows full well the strong predilection bees have at the approach of cool weather to ascend, not descend. Should the hive containing the swarm be filled with combs, and anything like the same store as in the box, which we presume is fitted with bars affording a free passage upwards, ascend they will undoubtedly, hatching out any brood and exhausting the store below, their practice being to use the lower honey first. The box can be removed when empty, and, seemingly of an unserviceable size, had better be condemned, the comb cut out to fit the frames of a well-proportioned hive, into which your correspondent's first Ligurian swarm next season might be introduced with telling effect. In joining bees I always like to keep the queen I wish to save in the upper box, should one queen be previously removed it should be the lower. It would lessen the risk of fighting the joining taking place at dusk, aided with a good puffing of tobacco smoke to both.

Such a case as "A. W." puts I had last season. A weak colony in a straw hive topped with bars and slides (described in No. 4); another in a Stewarton-box, also weak, I put the two together, the box uppermost, drawing the slides gently; all went right, the smoke keeping down any attempt at quarrelling. Midwinter, in my absence from home, another such flat-straw hive (having been temporarily removed from its stand to facilitate the training of a fruit tree on the wall behind), was unfortunately overturned, and lay on one side on the border during a dreadfully wet and stormy night. On my return, here was a case—combs soft and down, all in a mess; the bees providentially safe, from having ascended to the upper side, seemingly at the outset; their queen, the most prolific I have ever seen. She, with her subjects, I was most wishful to preserve; but how to do it—there is the rub. Recollecting the under hive of the united bees must be by this time vacated, I looked and found it so; not a [illegible] but was packed in the box above. I, therefore, cautiously [illegible] it out, placing a four-inch octagon eke in its stead; then [illegible] day, with the assistance of a couple of [illegible] without casualty [illegible] faller [illegible] [illegible] to [illegible] [illegible] the [illegible] two workers and one of the united queens, round whose royal remains, about a dozen workers were grouped, solemnly musing on this monument of fallen greatness.

Some of your correspondents' killing tales in this way are woeful to contemplate.—A RENFREWSHIRE BEE-KEEPER.

A LIGURIAN MISADVENTURE.

"I RECEIVED the stock of Ligurian bees last Monday about 1.30 P.M. They appeared alarmed, and made a great noise all the afternoon. At 4.30 I began driving a weak stock I had bought on purpose to unite with the Ligurians. It was nearly an hour before I could get sufficient bees in the upper hive to feel sure the queen was there. I put the driven bees out of the way after carefully closing the entrance so that none could escape; turned up the old straw hive, and closed it also. I now very carefully loosened the zinc cover over the Ligurians, but did not remove it, and here my assistant (a lady) found out that the Ligurian could sting through perforated zinc. Now, also, began my troubles. I found two combs broken loose. I then opened four slides of a bar-and-slide hive, and after removing very carefully the bottom piece of zinc in your box (not a bee escaping or being hurt) I took off the top piece of zinc and removed the loose combs, brushing off the bees with a feather; took out the two bars and combs, brushing off the bees, which descended rapidly into the bar-and-slide hive; took off your box, and after giving a few puffs of fungus smoke into the bar-hive, and the same into the straw hive, put the straw hive on the top of the bar-hive, and drew the slides. I could hear there was some fighting, and the noise your bees made from their arrival was continued all night. On Tuesday morning I feared loss of queen, the bees flying about very wild; 11 to 12 o'clock I lifted up the straw hive, cut out the comb, and swept out the bees on to the bar-hive and through the slides. The uproar continued just the same, and at half-past 4 P.M. I removed the bottom board and swept away the slain into a corner of the room. The confusion from 3 o'clock I think had increased. My assistant searched the heap of dead bees and found the queen I enclose. I then took up the driven stock which had remained closed, and, opening the slides, suddenly shook them on to the top of the bar-hive, and put the honey-box over all. Still the uproar continued, and I was fairly at a loss to account for it, when my assistant said, 'Here are a few bees on the floor, I will sweep them into a tumbler, and you can put them into the hive.' This was done several times from the same spot in the course of the next ten to fifteen minutes, when to my astonishment I saw a queen, and put her very carefully into the hive. In the next fifteen minutes there was hardly a bee to be seen, and all was quiet, no more fighting or uproar, and since that time the bees have eaten 7 lbs. of sugar made into syrup by just boiling 2 lbs. of sugar in one quart of water, and then adding a large spoonful of honey while the syrup was hot. They are fed with a bottle.

"Now, Sir, I have no doubt but that the Ligurian queen is in the letter I send. My assistant has been reading page 452 of THE COTTAGE GARDENER, and hopes, that, like S. Amey, I may be mistaken; but she cannot give any reason for such hopes; so to make her mind easy, will you please say if you think the enclosed dead queen is the Ligurian or not? I cannot possibly see how it could be the other.

"The Ligurians are a much prettier bee, and we think more active in their movements; at all events, they are favourites, and although I have failed now, I hope next spring to have either a queen or a stock to try again with.

"My bees are all in-doors. This hive has been put to the north, and is in a closet up-stairs leading out of a bedroom. Their passage out being under a window-frame. They are now hard at work. I saw above a dozen take in pollen to-day in the course of half an hour, and there is great heat inside the hive. I shall now feed slowly, but as the season for breeding is over, I shall not be able to say if it is the Ligurian or common queen in the hive. I put in six very large sheets of old comb, and I see they have made a good deal of new comb in addition."—J. N.

[I regret to say that the dead queen mentioned in the foregoing letter was undoubtedly the Ligurian. My correspondent made a great mistake in attempting to unite bees to his Ligurian stock so soon after its arrival. The Italians should have been set at liberty, and the excitement produced by travelling allowed [illegible] before they [illegible] introduced to strangers.—A DEVON[illegible] KEEPER.

THE PROFIT OF BEE-KEEPING.

E years ago a bishop was holding his first visitation of the
of his diocese in a town in one of the midland counties.
gst those assembled he soon discovered an old college
ntance whom he had not seen for a great number of years,
iom he greeted with all the warmth of a renewed friend-
On comparing notes with his friend, the bishop learned
egret that he was still a curate in a country village at a
l of £100 a-year, and that he had a wife and large family
port. The worthy curate, however, invited the bishop to
a day with him before he left the neighbourhood, and the
not wishing to appear proud, accepted the invitation.
ching the parsonage he was surprised to find his friend's
elegant well-dressed lady, who received him without any
embarrassment which a paucity of means too frequently
ns in those who feels its pressure. The children, too,
ll well dressed, and looked anything rather than as having
d from the pinching pains of unappeased hunger. But
od bishop's astonishment was still greater when he sat
o partake of a repast worthy of the traditional and cus-
fare of his order, and was invited to "take wine" of the
flavour and aroma with his fair and graceful hostess.
ing that his friend was originally a poor man, he con-
l that he must have received a fortune with his wife.
therefore, the latter and the children had withdrawn, the
introduced the subject, by expressing a fear that his
had gone to an unusual and injurious expense to entertain
nd that it would entail privation upon him afterwards.
at all," replied the curate, "I can well afford to entertain
l friend once in a while without any inconvenience."
," rejoined the bishop, "I must congratulate you, I sup-
n having received a fortune with your good lady." "You
rong, again, my lord," replied the poor curate; "I had
shilling with my wife." More mystified than ever, the
resumed. "Then how is it possible for you to have
comforts around you that I see, out of a hundred a-year?"
my lord, as to that, I am a large manufacturer as well as a
man, and employ many thousands of operatives, which
me in an excellent living. If you will walk with me to
ck of the premises I will show you them at work." He
ingly took him into the garden, at the back of the house,
here was a splendid apiary, with a large number of bee-
the source of the curate's prosperity. The bishop never
the circumstance, nor did he ever fail to make use of its
ent; for when he afterward heard some poor curate
ain of the scantiness of his income, he would cut the
short by exclaiming, "There, there, let's have no
ling. Keep bees, like Mr. ——; keep bees, keep
—(*Mark Lane Express.*)

EMARKABLE PRODUCE OF HONEY.

. PARKER, of Station Street, Lewes, who has kept bees for
and during 1860 was very unfortunate (out of three hives
ving 6 lbs. of honey, and three sets of bees), has now
e wonderful produce of 76 lbs. of honey from one hive.
s the more remarkable, as bees generally have been so
nproductive this year. They were fed all the winter upon
and honey.

THE RABBIT (LEPUS CUNICULUS):

ITS HISTORY, VARIETIES, AND MANAGEMENT.

(*Continued from page* 490.)

FEEDING RABBITS.

success of breeding Rabbits on a large, or even on a small
depends in a great measure on the care taken to keep them
y—a state indispensable to all animals reduced to a state
nesticity. These cases are the more easily understood, as
ate of confinement completely annihilates many of the
ts of self-preservation with which Nature has endowed
imal.

bits are herbivorous, and the plants, grains, and fruits
ay enter into the composition of Rabbits' rations are as
ous as they are varied. All kinds of vegetables—as carrots,
s, beetroot, artichokes, cabbage, endive, celery, potatoes
or roasted, lettuces when old and run to seed are best,
saintfoin, lucerne, lentils, vetches, pea and bean haulm stored for winter, chicory, marsh mallows, sow or milk thistles, hare parsley, and dandelion, wild or creeping thyme, pimpernel, aniseed, coriander, and peppermint when green, and fennel, constitute a tonic and strengthening forage, which also please the animals but must be given sparingly, being very exciting food.

All plants, &c., obtained by the weeding of gardens, omitting the mustard plant and poppy. Among fruits desirable, are apples, pears, acorns, beech nuts, &c. The leaves and cuttings of all trees. All the above-mentioned vegetation may daily contribute to the food for an animal that will take almost any plant or vegetable if it is administered properly and seasoned with drier food.

Of the dry substances which form the staple food for Rabbits, oats and barley are the principal. Buckwheat bruised is much used on the continent, but I have never tried it myself. All kinds of meal will be found good for them—viz., barleymeal, oatmeal, middlings, fine and coarse, pollard, and bran. But the great object is to give them as much nutriment in as small a quantity of food as possible: therefore, the finer qualities of meal is the cheapest food, and must be mixed with water to a stiff mash and given to them warm. Barleymeal, oatmeal, or middlings, mixed with boiled potatoes is very nutritious and fattening. Grey peas soaked in water till they sprout is one of the most fattening of foods that can be given. One handful a-day to a full-grown Rabbit is sufficient, and two meals of other food will fatten a Rabbit in a very short time. Linseed boiled very slowly for about two hours and mixed with any kind of meal, is the best food to restore a lean or an emaciated Rabbit to condition, and it also imparts a sleek appearance to their coats.

TIMES OF FEEDING.

In the morning at daybreak, and from eleven in the morning till one in the afternoon, and one hour before sunset, the Rabbit leaves its burrow to seek its food.

The tame Rabbit although not born in the warren retains the same instinct, and it is at the same hours that you see him awake and looking about, almost asking for its food.

GIVING GREEN FOOD.

If dry forage is given them indiscriminately at stated times, you must not do the same by green stuffs. They should never be given when damp with dew or rain, because this wet food tends to cause meteorisation or swelling of the belly, and almost always causes diarrhœa, which makes them thin and more often kills them. These diarrhœas are owing to the intestinal irritations, which it is the greatest importance to prevent. During long rains the plants should be gathered the day before they are to be given them, and by exposing them to the air to facilitate the evaporation of the water. You contribute to this evaporation by spreading the greens in thin layers, or placing them on a hurdle. If these means will not suffice, you should mix with some straw which absorbs the damp. If you mix them with hay, which is still better, it produces the same effect, and the mixture serves for rations. At the same time it is necessary to avoid giving them greens that have been picked some days, and through laying together become fermented, as they would hurt the Rabbits seriously.

INCONVENIENCE OF CONTINUAL GREEN FOOD.

A too-watery green food given continually, and particularly if the sorts are not varied, is attended by grave inconvenience; the belly of the Rabbit grows big, its stomach is unnaturally enlarged, its flesh becomes soft, it becomes idle, lymphatic, and is often attacked by the tape worm which is developed in strings round the intestines. It has often a liquid goitre, and often dropsy show themselves. As we have before said, the wild Rabbit lives on green food and yet is vigorous; but we must remark, that he has a choice of food, not merely watery green food, but tonic herbs, and that by instinct it selects those plants that are tonic and strengthening. It has, moreover, the possibility of exercise, which contributes to its health.

CHANGE OF FOOD.

Like all other animals, change of food is necessary—it excites their appetites and assists digestion. This change is more necessary in the sedentaries—that is to say, those shut up in hutches, than those having the privilege of exercise.

CONDIMENTS.

The greater the impossibility to change the green food, the greater the necessity for seasoning it. This may comprise green plants—such as parsley, fennel, coriander, aniseed, peppermint, bitter chicory, wild thyme, pimpernel, &c. These plants may be cultivated for this, and twice a-week these plants should be mixed with other green food. Salt as a seasoning should be mixed with meal once or twice a-week.

Some Rabbits eat faster and require more food than others of the same size and age. As a general rule it is sufficient to give them just what they will eat at the meal, and it would be better they left off hungry than they should leave their food and waste it. It sometimes happens that Rabbits refuse food, and you find the portions that you last gave scarcely touched. The common opinion is, that if a Rabbit breathes on his food he will not touch it after; but this is an error, for if you take that away and give fresh the result is the same. The true cause is a loss of appetite caused by cold or a derangement of the digestive organs. The quickest way to cure them is, to give a slice of bread dipped in warm milk, not more than the bread will soak up, and not too warm. This with a nice warm berth and a good bedding of hay will restore the appetites of Rabbits to their ordinary food.

GENERAL RULE.

Give chiefly dry food, and always let there be a vessel of clean fresh water, from which they can drink whenever they please. This is contrary to the usual custom; but from experience we can state that it is conducive to the health of Rabbits.

FATTENING RABBITS.

Many ways of fattening Rabbits have been recommended. Nothing answers better than barleymeal, oatmeal, soaked grey peas, boiled linseed mixed with meal; but these substances must be varied. Oil-cake will fatten Rabbits to a great size, but the difficulty is to get them to take it, which is only done by starving them into it, and by giving very little at first, which should be pounded and mixed with meal; the cake should be placed near the fire, and, when warm, can be pounded easily. Many writers have asserted that if you give green food while fattening Rabbits it will defeat the object. I do not advise a large quantity of green food, neither do I advise it to be of a too watery kind, as cabbage, &c.; but a very little good aromatic food, as dandelion, thistles, or any plant of the same family. When these plants cannot be got, I would advise a little water given once a-day, or to accelerate the process of fattening a little milk sweetened with sugar. I was once shown a Rabbit of 14 lbs. weight that had been fattened solely on clover hay and milk sweetened with sugar, as much as it liked to drink. I have also seen Rabbits killed in first-class condition that had been bred, reared, and fed in a strawyard and shared with the cattle, only having green food, hay, straw, &c. The best age at which you can take Rabbits to fatten them is from four to six months; having reached that age they fatten on little, while before they would not fatten, having nothing but skin on their bones in consequence of their growth. One should not wonder to see them get thin when they are young; one should rather be uneasy if they grew too fat, it being an unnatural state, and prognosticates a small, stunted Rabbit.

Rabbits should be kept at all times in clean airy habitations, and you must pay attention to those you fatten. Although much exercise is not good for them at this time, if they were placed for a few hours a-day, in fine weather, on a piece of dry gravelly ground, and given a little green food to eat, it would greatly contribute to their health. In selecting your subjects for fattening, the young males should always be sacrificed before the females, they become amorous sooner, and their flesh always loses some of its flavour.—R. S. S.

(To be continued.)

GESTATION OF GUINEA PIGS.

[illegible] COTTAGE GARDENER [illegible] January 22nd, 186[illegible] [illegible] Correspondents," it was [illegible] in reference to Guinea [illegible] that "the doe breeds when [illegible] months old, and [illegible] ten to fourteen young ones [illegible] several times a-[illegible] after a gestation of three weeks."

The following [illegible] number I [illegible] [illegible] which appeared [illegible]

"The number of their litters, and the period of gestation are very powerfully influenced by the temperature in which the Guinea Pigs are kept. If their hutch is in a heated room, such as a stove or warm greenhouse, they multiply most rapidly, and at a much earlier age than if kept in a cold outhouse."

This discussion having attracted the notice of Mr. Darwin, he wished me try the experiment, as he did not think that warmth could cause any such difference in the period of gestation.

The following is the result of my first experiment, having received four Guinea Pigs, one boar and three sows:—

The first sow was placed in a hutch out-of-doors at the north side of the house, exposed to all weather, and where not a ray of sunshine could be felt. She went to the boar on Saturday afternoon, May 25th, and brought forth four young ones on Sunday morning, August 4th. Period of gestation being ten weeks and a few hours.

The second sow was placed in a hutch and kept in the kitchen chimney-corner, where all the cooking, &c., was done, and the fire scarcely went out at night. Her hutch was littered some inches thick with chaff, and she laid basking in the warmth apparently much enjoying it. She went to the boar on Thursday afternoon, June 13th, 1861, but she died on the evening of Thursday, the 8th of August, apparently of disease of the heart most likely brought on by the heat. A post-mortem examination showed her to contain five young ones nearly full grown, and as she had already completed eight weeks of her gestation, this must quite disprove the three weeks' statement.

The third sow was allowed to remain loose in the pigeon-loft. She had a comfortable, warm-sheltered lodging, the weather being also warm, but no artificial heat was applied. She went to the boar on Wednesday afternoon, July 31st, 1861, and littered on Monday morning, October 7th. Her period of gestation being nine weeks and a little over four days. She had five young ones, two were dead, and the three living rather small. Her period of gestation being only between two and three days shorter than the first sow's, a variation of no particular amount.

I should like to hear if any other of your readers have tried the same or similar experiments. If I have an opportunity I will try one by the kitchen fire, and the other out of doors in the cold this winter, and report the result in due time.

I am sure you desire to be as correct as possible in all your statements, and, therefore, need not apologise for troubling you with these particulars.—B. P. BRENT.

[We are especially obliged by such communications as the foregoing. If journalists were incorporated, they ought to have as their motto—"Truth above all things."—EDS. J. OF H.]

OUR LETTER BOX.

BOTTLE-FEEDERS FOR BEES (*A New Hand*).—Messrs. Neighbour & Sons will gladly exchange the unfortunate float-feeder which was sent in mistake. They have now an ample supply of bottle-feeders in both their establishments.

TAMING A HORSE—VINEGAR PLANT.—*Clericus* inquires—"Could any of your readers advise me how to tame a very shy horse in the stable, and how to teach him to stand? He will not bear being haltered or otherwise fastened by the head when I stop at cottage doors and have to leave him outside. Could I obtain a vinegar plant anywhere?"

FOOD FOR A COW (*W. H. James*).—If she is to be kept on grass and hay only, three acres will not be too much. But that space would keep two cows, if half an acre were pasture; half an acre and eight rods wheat; one quarter of an acre oats; and the remainder for green food, such as early rye, tares, cabbages, clover, mangold wurtzel, and Italian rye grass. But this requires good spade husbandry and incessant cropping, which is easily effected by the aid of a good supply of liquid manure. We do not know the average produce per acre of wheat in Surrey; but of all England it is about three quarters, and of straw 26 cwt. A bushel of wheat weighing 60 lbs. yields 48 lbs of flour.

LONDON MARKETS.—OCTOBER 21.

POULTRY.

There is a slight increase in the value of Poultry. Trade is somewhat improved, and the supply is small. Partridges are becoming scarce, and are in good demand. If the weather were to be cold, we think the ordinary prices of this season of the year would be more than maintained.

Each—	s.	d.		s.	d	Each—	s.	d.		s.	d.
Large Fowls	3	6	to	4	0	Grouse	2	0	to	[illegible]	[illegible]
Smaller Fowls	3	0	,,	3	6	Partridges	1	4	,,	1	[illegible]
Chickens	1	6	,,	2	3	Pigeons	0	8	,,	0	[illegible]
Ducks	2	0	,,	2	6	Hares	2	6	,,	3	[illegible]
Geese	[illegible]	[illegible]			0	Rabbits	1	4	,,	1	[illegible]
Pheasants	[illegible]				[illegible]	Wild	[illegible]	8	,,	0	[illegible]

WEEKLY CALENDAR.

Day of l'nth	Day of Week.	OCT. 29—NOV. 4, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
29	Tu	Anthericum revolutum.	30.106—30.084	60—34	E.	—	50 6	37 af 4	8 1	25	16 11	302
30	W	Mesembryanthemums.	30.162—30.001	67-36	E.	—	52 6	35 4	29 2	26	16 14	303
31	Th	Agapanthus.	30.141—30.034	52—35	N.E.	—	54 6	34 4	53 3	27	16 16	304
1	F	All Saints.	30.030—29.974	55—30	N.E.	—	VI	IV	21 m 5	28	16 17	305
2	S	Autumn Crocuses.	30.025—30.009	51—22	E.	—	58 6	30 4	sets	●	16 18	306
3	Sun	23 Sunday after Trinity.	30.099—30.033	50-22	E.	—	59 6	28 4	31 a 4	1	16 18	307
4	M	Arbutus unedo.	30.082—30.042	45—30	E.	—	VII	26 4	22 5	2	16 17	308

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 54.1° and 37.5° respectively. The greatest heat, 67°, occurred on the 29th in 1833; and the lowest cold, 20°, on the 3rd in 1845. During the period 118 days were fine, and on 120 rain fell.

A COMPOUND SYSTEM OF HEATING.

WHAT about the frost, the winter, the Kiddean system, the Polmaise, and the pulmonary systems, the geothermal process, the damp, the dry, and the top and bottom heat? Is this disease of variegated plants the effect of too much or too little heat? Or, is it pulmonary, or is there a pulse at all in vegetables to be deranged by accidents, or by the hand of man? A bright article might be ritten on each one of these heads, and as many chapters s would fill a book, and not exhaust the subject either.

The first part of the subject is thus favourable to us nd ours of the flower gardens. The week on which the 0th of October came in this autumn, passed off without ny signs of frost, and that used to be the sign to old ardeners that there were nine chances to one that the ext six weeks would also pass off without much frost, or o more of it than to pinch Geraniums without killing iem, and I hold it to be a natural fact, that old gareners and old sailors are better judges of the weather ian young philosophers.

Now, just at the moment I am writing this, I am etting in the "materials" for a system of heating quite ifferent from all those just named—quite new in the reations of man, and yet embracing some of the best oints in every one of all the systems of heating that ere ever applied to gardening, save steam alone; but I m not yet quite sure if steam shall not be the final esult of all my labour.

Recollect, I must pay every farthing of the cost out of iy own pocket, which is but a very shallow one indeed. herefore, what I shall do now for myself will be the est and cheapest thing that all my experience will enable e to accomplish with the smallest possible outlay. But, ecollect, also, that I would not recommend anybody to o what I am going to do for myself, until the world has one once more half round the sun, and by that time shall be able to tell if I made a good hit or a fool of iyself. I mean to accomplish the following things if I icceed:—To have moist bottom heat to force Roses, id to grow any plant plunged in damp bottom heat up Colocasia metallica; in the second place, to have the ower of changing this most agreeable, mild, moist ottom heat into a dry heat, in the twinkling of an eye; i the third place to be able to have dry top heat, half ry top heat, or moist top heat, at will and pleasure. nd from the very same apparatus thus at work to get ry heat for my pit plants—that is, my bedding-out stuff id stuff like it, and at the same moment and by the ery same contrivance to have a mild April afternoon mperature for a vinery over my right worthy Esperione ine. Since Capt. Hopkins had excelled me in out-door Grapes, I resolved to match him in his conservatory Grapes, which were particularly good this year.

Since I heard of the first failure of the Polmaise system of heating, I have been growing this system, and endeavouring to ripen it in my own brains. The Polmaise is very nearly the system by which the heat round the world is managed by natural laws. But no one ever yet succeeded in managing the Polmaise as Nature does the other.

The growth of this way of heating was going on just that way from the first, until I sounded Mr. Kidd about his way of heating, and that was a godsend to me, for I made four years' growth out of him alone, for I see quite plain that he has gone the nearer to the best plan than all who tried the Polmaise law of Nature plan put together. All his system wanted to be absolute perfection both in practice and theory, was the not sucking back the cold and cooling air from the house, and the lack of moisture in the air he supplied to heat. But then his plan was quite sufficient for his own wants at the time, and he succeeded perfectly as far as he went. I go a great deal farther, I Polmaise a pit seventeen lights long, I top and bottom dry or moist heat three lights at one end of the pit, or at least am going to try; I dry heat fourteen lights on the principle of the old flue, but without smoke, and my vinery which will be 18 feet by 16 feet, owing to the situation, or nearly a cube of 18 feet on the side, will be Kiddean and Polmaise together. All this from one small fire in a roomy fireplace, as all gardeners always recommend.

From our own pages I have had a constant supply of information, and I am greatly indebted to the fertile brains of Mr. Fish, in the matter of fires, and flues, and pipes, and in their various arrangements.

Well, then, under the first three lights of my cold pit, at the farthest end of the range, is a Kiddean hot-air chamber, which is of the same size as the body of the pit, so to speak, the back wall and the front wall of the pit being the two sides of the chamber. A cross four-inch wall divides the three lights from the rest, or from the other fourteen lights, and that makes the farthest end wall of the hot air, and the end wall of the range makes the other end of the chamber; the fireplace, or rather the furnace-door is flush with this wall, so that the ash-pit and fireplace are all inside the pit. The fireplace is in the centre, and is 18 inches long, 16 inches wide, and 16 inches high in the centre. The top being an arch of good, hard-burnt bricks. At the farthest end of the fireplace is a rise of three bricks to the smoke-flue, which goes in a straight line, and on the ascent to the farthest end of the chamber. This is all the fire I have, and it can be cleaned with a long pole and a brush from through the fireplace, without disturbing anything.

At the farthest-off end of the flue begins a coil of glazed earthenware pipes 6 inches in the bore. The first pipe is an elbow bend, the bent part joining the flue. Here there is a rise in the draught the length of the bend. This pipe is turned to the left, or to the front wall of the pit. Another bend at the wall turns the pipes back along the front wall to the end of the arched fireplace. Another bend allows the pipes to pass across the pit to the back wall at the farthest end of the arched roof over the fireplace, and two more bends bring the coil right round the chamber and gently rising their whole length, and the spaces between them and the flue in the centre are filled with rubble. Over this space is a foot in height free from anything, then the roof of the chamber, which makes the bottom for the hotbed in the three lights.

The roof is of strong pieces of wood 9 inches apart resting back and front on a ledge in the brickwork, and is further strengthened by a centre bearing a four-inch wall, pigeon-hole fashion over the flue. This is strong enough to carry a castle, but inch slate bearers would be preferable to my wooden ones. Common pantiles, such as for roofing, is the covering over the bearers, and 2 inches of rough gravel over the tiles finish the chamber most completely, and dry heat or moist heat can rise between the tiles and through them, when they get hot, freely enough. Then fill in a bed of the cocoa-nut refuse, which never dries, in place of tan, and the three lights are ready for hotbed work, fit for Pine-Apples if you choose, or only mild enough for Roses and Violets if you will it.

Now, for top heat and for a mild moist heat of about 80° to 90° in the air within the chamber, which ought to impart a heat of from 70° to 80° to the cocoa stuff above, and to the pots plunged in it.

The constant moist bottom heat which need not vary 5° in two months, in December and January, is obtained from an evaporating zinc pan placed over the arch of the fireplace. The sides or abutments of the arch being carried up as high as the crown of the arch, and the space filled in with grouted lime and gravel. There is a level bed for the evaporating-pan, and there is a trap-door in the end wall over the fireplace to fill the pan and to see how things look in the mist and vapour inside, or to withdraw the evaporating-pan or empty it, if a drier air is necessary to what one is aiming at.

For top heat, three-inch glazed pipes join to the end of the coil in the chamber, rise through cocoa-stuff-bed at the farthest end, and pass on in front and across over the fireplace, up the back wall, and out at the very corner of the pit, and the damper to regulate the draught is a flat piece of plate iron laid loose on the top of the pipe or chimney, if you like it better. When the flat piece of iron covers the whole bore of the pipe, there is no draught and any amount of draught from nought to the capacity of the bore of the pipe can be given by a move, and the thing could be regulated by a child.

The air in the hot-air chamber, if it is intended for anything I know of in gardening, need never be hotter than 100°. That is the whole secret of Polmaise. Oftener than not 80° will be quite sufficient, and you may get up that degree of heat in the middle of the day, and be sufficient to last that evening and the whole night, with no disturbance or addition to the fire, provided your fuel is of a description to burn in a smouldering way with very little draught.

There is a six-inch common unglazed earthenware-pipe communicating between the cold part of the range and the very bottom of the air-chamber, at one corner, the back wall corner, and there is a two-inch plain draining-pipe communicating with the hot-air chamber, and running just like a flue all along the front of the pit, just to keep out the frost and no more. This flue-pipe heats, or is supposed to heat my humble pit without letting any of the hot air escape into the pit more than if it were smoke.

The vinery which is to be, abuts on the other end of my cold range, and the hot-air two-inch pipe after passing up through the range and heating it, discharges the hot air into the vinery, just as Mr. Kidd's air-flue does in the conservatory.

If the heat from the two-inch pipe is not sufficient for my plants in very cold weather, I can by a slide let in a whole volume from the air-chamber at once, or I can leave a small opening here and there in the joints of the two inch pipe for the escape of as much heat as will be necessary.

I intend the air in my hot-air chamber to be always as [illegible] heat will hold in suspension, and I believe the [illegible] earthen-pipes between the hot-air chamber and the vinery will suck so much of the moisture from the air in its passage to the vinery, as will render it sufficiently dry not to hurt any plants in the vinery. So that instead of risk from dr[illegible] air from [illegible] common fireplace, my attention must be directed [illegible] is not too moist at any [illegible] pull at the evapora[illegible] [illegible] B[illegible]

CULTURE OF ALOCASIA METALLICA.

In answer to "Amateur," we have to state that it requires as much strong top and bottom heat the year round, and as much moisture in the air all the while as succession Pine-Apple plants. But, like many of the old associates of the Pine-Apple plant in our early Pine-pits, good gardeners can now manage such plants without bottom heat, only the moist air of the common stove, and that is how this metallica is grown to perfection in the Kingston Nursery. Sixty degrees is about the average heat of that stove all the winter months; but, of course, it is down to 55° at times, when it is very cold, and up to 65°, and higher, when the sun plays on the glass. From October to the end of March it is best to have such plants as this, with their succulent parts, in rather a dry atmosphere; but when they, and this one in particular, are growing in earnest, the air of the house cannot well be too moist.

All this race like a generous soil. Such as they use for the very best show Pelargoniums is just the very soil for Alocasia metallica as soon as it is out of nursing compost, which, of course, is always, and for all plants more or less sandy, or peaty and sandy together. A young Firefly Pelargonium likes plenty of sand and leaf mould with the loam till it is out of 60-pots, and all pots of that class, and it is just the same with Alocasia metallica, and with five hundred kinds of plants which stand, in botany, on each side of it.—D. B.

NOTES ON SOME OF THE FRENCH NURSERIES.—No. 2.

Monsieur André Leroy, Angers.

Whoever would form his estimate of the extent and importance of the French nurseries from those in Paris would be greatly mistaken: and therefore, although I have notes of many others both of the metropolis and its environs which I shall hope yet to give, I prefer bringing before the readers of The Journal of Horticulture a short account of perhaps the most remarkable nursery in the world—that of Monsieur André Leroy, of Angers.

Angers is the very paradise of French nurserymen, and of them all M. Leroy is "the king." Situated as it is in a climate where the more tender things of the South not only grow but produce their fruit in the open air, and enjoying a fertility of soil which seems to be capable of producing anything, and not subject to the extremes of temperature (owing to its nearness to the ocean) which are experienced in the interior of France, it seems not only to be admirably adapted for gardening purposes, but to have been so appreciated by the French nurserymen; for in the environs of the town there are upwards of 500 acres of land so employed, and of these 300 are in the occupation of Mons. Leroy, whose object it is to cultivate simply such things as are capable of being grown in the open air in France; so that, save for the purposes of propagation, there are no greenhouses on the property, and the productions of tropical climates do not form the subject of his care and attention. To attempt to give anything more than a very rapid sketch of such an immense establishment would be utterly useless: and therefore my object will be simply to notice those points which most forcibly struck me in the drive which we took through it, for to walk through such a nursery would be no easy matter, especially as my visit was paid in one of the warmest days ever experienced in France for the season of the year.

It is from the neighbourhood of Angers, Nantes, &c., that the largest exportation of Pears takes place to Paris, England, Russia, &c. Many of the fine specimens of Glou Morceau, Duchesse d'Angoulême, &c., which we often see in Covent Garden being the production of these places. The extent to which they are grown may be judged of from the fact that 50,000 lbs. weight of Pears have been sent from the railway station at Angers daily for the last two months, and the supply is by no means yet exhausted. This leads, of course, to the necessity of having a large supply of trees; and M. Leroy has nearly 500 varieties of the fruit in his collection, grafted either upon the Quince or seedling Pear stocks. He has a large collection of fine pyramids, from which the workmen were then gathering baskets of noble-looking fruit. Some idea of the rapidity of growth may be formed from the fact that the seedling stocks of a year old were [illegible] that those grafted the beginning of last August [illegible] pples are grown also [illegible] a very extensive manner; and there are upwards of 300 varieties of Grapes for the table, none of the wine-making sorts being included. In passing along I noticed the Olive tree in a sheltered spot in the garden in full fruit; also two or three varieties of Malus, such as Torengo and baccata fructu rhotomagensis, also having large quantities—the latter being those beautifully high-coloured little Apples so daintily arranged in boxes in Covent Garden, and called sometimes Lady Apples. Here also we found the Pomegranate in fruit, though small and not ripe. On the walls Peaches were grown. They are grown, as I find, very extensively in France now on the system of "Debrueil;" and certainly it seems to be one capable of producing a much larger quantity of fruit in the same space and in a shorter time than the ordinary method. It has, no doubt, been described in THE JOURNAL OF HORTICULTURE: and therefore I shall not trouble your readers with a repetition of what has been, I dare say, better done before.

It would, perhaps, hardly be expected that a climate and soil suitable for fruit trees would answer for Conifers; but the peculiarity of both about Angers is that they seem to answer all kinds of trees. On entering the nursery there was a fine specimen of Wellingtonia, the stem of which was 1 foot in diameter, and it was only six years old; while Cedrus deodara was so luxuriant that trees 6 feet to 8 feet high were only six francs a-piece. Rhododendrons flourished here too; and the system of propagating is that of layering the bush down at all points, and thus producing hundreds of plants round the parent. This plan was formerly adopted in England. Probably the most striking thing in the whole nursery was the immense number of Magnolias. These were to be found in all directions and of all sizes, there being upwards of 25,000 of them, chiefly of the variety M. gallisoniensis. Although not so free-flowering as Lord Exmouth, it is much more hardy, and might perhaps, therefore, be worthy of more consideration in England. Standard trees 8 feet high were to be sold here for two guineas. A very fine Cotoneaster (nepalensis?) with large bright-looking fruit, and Thea viridis in bloom in the open air and quite hardy, also attracted our attention; and Elæagnus reflexa in full bloom was very fragrant, and perfumed largely the air around it.

In a sheltered nook on the wall was growing a very remarkable-looking plant, which I should think would answer admirably for a greenhouse climber. It is not new, and yet I think is comparatively unknown, and is called Phaseolus caracassa. The buds are exactly like a ram's horn, twisted in the most curious manner. It is a papilionaceous plant, blooming in racemes like the Glycine; the colour white and lilac, and the fragrance of it very delicate. In appearance it is one of the most curious-looking flowers I have ever seen, and I think would be a favourite, as it seems easily grown and would rapidly cover the rafters of a house. Camellias are grown here on a most extensive scale in the open air, tens of thousands of plants of all varieties being found in the nurseries; the only protection they ever receive being that of mats to shade them from the burning sun. But I shall have more to say of these when giving a few notes on Mons. Cachet's nursery, and must conclude this rapid sketch with a brief notice of what to me was perhaps the most interesting of all portions of this vast establishment—the Rose ground.

It is, I dare say, well known to most of your readers that Mons. Trouillard, the raiser of Eugène Appert, François I., François Arago, Reynolds Hole, &c., is M. Leroy's Rose-foreman; but as his seedlings are cultivated in a piece of ground near his own house, I shall not refer to them at present; but the Rose ground was filled with a large stock grafted, budded, &c., on their own roots. So great has been the demand, however, this year for them from England, that very few of anything like new Roses were to be obtained, and vast numbers of the others were marked off as sold. There was one point in the cultivation of them that, however, struck me as novel and good. The Manetti is acknowledged now to be a very valuable stock for strong-growing Roses; but in the case of many of not so vigorous a constitution, the bud, not having sufficient vigour to receive the sap of the stock, becomes soon overpowered, or else a vast quantity of suckers are thrown up; while often the Dog Rose obtained from the hedge has not sufficient root to impart vigour enough to the Rose. To meet these difficulties it is the custom at this establishment to sow the seed of the Dog Rose, and to graft low down on the seedling plant those varieties, such as Madame Furtado, &c., which are not of the vigorous constitution that others have. I cannot but think that this affords a useful hint to us in England; and doubtless the Rose itself would root and thus become almost on its own roots, while at the same time it would be more long-lived than if on the Manetti. I found that some sorts which are regarded as fine in England are not well thought of here, and *vice versa*. Reine des Violettes being considered fine, and Duc de Cazes good for nothing; while some seem to come equally fine in both countries. It is the same in every kind of flower; I saw at Mons. Rougiere-Chauviere some of our finest Dahlias most complete rubbish.

I cannot close this notice without alluding to the most kind manner in which everything was shown to me (as a friend of Mr. Standish's) by Mons. Baptiste Desportes, M. Leroy's partner, or to the hospitality which I received at the house of M. Leroy himself. One rarely meets with one so full of anecdote and *bonhommie;* and surrounded as he was by a family whose names are well known to us as Rose-growers—his son-in-law, M. Eugène Appert, and his grandchildren, Mesde. Therese and Marguérite Appert, with his aged mother-in-law, it was a pleasant sight to see the affectionate intercourse of four generations, and gave me a most favourable view of French country life. I shall ever retain a lively recollection of one of the most pleasant and interesting visits I ever made; and shall be glad if I have made what I saw anyway useful to your readers.—D., *Deal.*

TREATMENT OF OLD VINES IN A VINERY.

I HAVE this summer changed my residence, and at my new place there are two vineries, with which I am rather puzzled how to proceed. The previous owner and occupier of my house and gardens, looked after the vineries himself as an amateur; and I hear that for years past he has allowed the Vines to bear the heaviest crops he could possibly get. The Vines are naturally feeling such overcropping, particularly as the border is a very insufficient one at the best, and indeed, how the Vines have borne such large crops as I am told they have, is to me a mystery with such a border.

The Vines are White and Grizzly Frontignans, Black Hamburgh, Black Tripoli, White Sweetwater, a large white *Spanish* Grape (I think), in all seven or eight Vines in each house. The Vines have been trained each with three equally large leading stems, so that the whole surface under the glass is equally covered all over with leading shoots. This proves very bad for plant growing, as it excludes anything like a good amount of light to the plants below. This is one of my difficulties.

The border is a miserable one. It is only about 4 yards wide, from the front of the houses to a hard gravel walk, and it is nearly flat; very little slope from the front of houses to the walk. The other day I made my man dig holes opposite two or three of the Vines, but on the far side of the gravel walk, about a yard into the vegetable-bed beyond, and at a depth of 18 inches to 2 feet, we came to numerous fibres of Vine roots, none thicker than a crow-quill, but many of them clearly shewing that the Vines had travelled right under the gravel walk, and into the vegetable-beds beyond.

Now, what I wish to know is, how best to proceed to renovate the border. If I confine the bones, manure, &c., to the present border, I am afraid the points of the roots are mainly in the bed beyond. If I move the gravel walk further back, and dig up the present gravel walk, I am afraid of exposing and injuring the Vine roots beneath it, and if I do not do something to keep the Vine roots from wandering further still away in the beds opposite, I shall never know where to have them, and where to apply stimulants. What would you advise? The border must remain nearly flat; a slope cannot be got. The houses have a due south aspect, and are in a warm, dry soil. The Vines are remarkably free from disease. They had large crops (far too large) left on this year, and, consequently, the Grapes have been small, and not coloured well, and the Vines evidently want a thorough root-refreshing.

Would you also advise how many bunches are enough to allow each Vine to set?

Can I this autumn safely cut away from each Vine all but one leading shoot, so as to train them on one and not three?

The house that is usually forced first has good flue heat sufficient to heat well; the other house has only small hot-water pipes, just enough to keep out frost.—G. R. V.

[From all you state we should decidedly say, Leave well alone. Most likely the roots have got something nice below the gravel walk. If the surface soil on the old border is exhausted, add a little fresh, after removing all the old you can without injuring the roots. Your thinning out the shoots, and thinning out the bunches, will cause more strength to be thrown into the bunches left; but all growing of Vines and plants must ever be matter of compromise. If one Vine stem is left to a rafter—say 4 feet apart, and fine bunches are wanted, from nine to fourteen bunches may be taken. Most likely you may have twenty to forty from the different stems. Perhaps it would be as well to leave one stem the whole length, and one more half the length the first season, reducing the number to one stem afterwards. The roots, be assured, in such circumstances as you describe will look after themselves, and if not deeper than you state, will neither cause want of colour nor want of swelling. Try one year at any rate, and if that does not please them, renovate the border and lift the Vines, and keep them to the desired width if you deem that desirable.]

CINERARIAS BLOOMING PREMATURELY.

I HAVE some fine large Cinerarias, this year's offshoots, and they are showing bloom-buds. Unfortunately my greenhouse has very little sun from November till February. Would you advise me to pinch the buds out, to throw them back? I intend keeping the greenhouse about 45° in the winter, but am afraid the bloom will not expand without sunlight.—J. A. F.

[You had better pick out all the forwardest and let them bloom. The rest nip off any incipient buds and repot in larger pots. Whenever Cinerarias fill their pots with roots and get matted, they will throw up flower-stems, whether the plants be in small 60's or large 12's. At the heat you speak of, the flowers will open nicely. You must keep the later plants at the coldest end, and it would be as well if the pots stood on damp moss.]

SYCAMORES UNHEALTHY—MAKING A CARRIAGE ROAD.

ABOUT twenty years ago a plantation was turned into a garden. Several trees were left standing, and some of them being tall and slender were bound with iron to keep the stems (two or three), together. The iron appears to injure the trees, as the leaves turn yellow very early, and the topmost branches are leafless. The bark has overlapped the iron. Can I save the trees by taking off the iron bands, cutting away the bark which has grown over them, or would this weaken the trees too much, or otherwise injure them? The trees are all Sycamores.

Please to inform me how to make a good carriage road. I can get chalk, sandstone, gravel, and sand. My soil is a light loam.—G. B.

[We fear there is something else the matter with your trees than merely being iron-bound, although that, doubtless, does some harm, and we cannot well understand why it was done; but Nature is so accommodating as to cause the swollen parts of the wood above and below the band to unite and grow over the ligature. This is often seen in young trees that have been tied up to a stake and the tie not loosened in time. Perhaps your trees are suffering at the roots. Examine them and see if there are any leaky gas-pipes, or has any pernicious chemical substance come in contact with them. Generally speaking, the Sycamore is one of the most hardy of all forest trees, and not particular as to situation. If you cannot find out anything at the roots you might take off the bands if you can do so without cutting away much of the newly-swollen enlargement; but if you cannot get it out conveniently, merely cut it in two in one or more places, and also reduce the head by cutting away some of the more sickly branches, or you may cut it off entirely, making a sort of pollard of it. Early in the autumn is the best time to cut Sycamores, as they bleed much when cut in February or March. If your [illegible] do not show signs of improved health next year, write us again, stating more particulars as to situation, and if you be injured in any way by factory smoke of a poisonous kind—that [illegible] soda being very obnoxious to vegetation.

You may make a good carriage road of the materials you [illegible] not excavating the lime more than 3 inches or 4 inches, [illegible] be in the least inclined to be wet, let the foundation [illegible] incline to the [illegible] and run a drain there filling all [illegible] the [illegible] usual size of road metal, and lay it on quite to the height of the turf edging, and upon that lay on some hard gravel that has had all the finer sandy matter sifted from it, as the top edges of the sandstone will grind down with the carriage wheels to make the road smooth, only you must recollect that all depends on the hardness of the gravel for making a firm good road. Softer material cuts so with the wheels. Many gravels are flinty, but when hard gravel is not to be had, other hard stone broken very fine answers quite as well. We have seen some such stones broken by the inmates of union workhouses, and sold at a cheaper rate than could be obtained in any other way.]

THE PEACH TREES AT THE CRYSTAL PALACE SHOW,

WITH OTHER REMARKS ON ORCHARD-HOUSES.

BY an oversight I was not aware that the few stray notes I had made on the late Crystal Palace Show and its gardening had been received with so much animadversion by one of your readers until it was too late to reply by last week's publication.* I now, however, endeavour to reply to some of his somewhat personal observations, which compel me to be more egotistical than I otherwise would be, and which I have endeavoured as far as possible to avoid. But as the matter of orchard-house cultivation of trees in pots is engrossing considerable attention at the present time, it is to the general reader that I now address the following remarks, leaving "A CONSTANT READER" to form his own conclusions.

My acquaintance with Peach trees in twelve-inch pots commenced about 1831. How long prior to that date they had been cultivated in that way I cannot say, but at the date I mention they were regarded as novelties, but not new; and although, I need hardly say, I had not the charge of any at that early time of my life I had a fair share of the management. The cultivation at that time being to place the trees in any glass house that was light enough, and when there was room for them (and glass houses in those days were not so plentiful as now) and the usual attention in watering, syringing, disbudding, and the like being gone through at the proper time, the trees were set out of doors in a sunny sheltered place some time before the fruit ripened, and a crop of fruit precisely of the same character as the majority of that obtained now was the general result, which was that of their being about two-thirds, or say three-fourths, of their proper size.

I may further inform the general reader that at the time the trees were set out in the sun, the pots were neatly bound round with hay or strawbands to keep them moist—a plan that is now met in plant culture of other kinds by inserting the pot in another and larger one; but the pains taken to bind these strawbands neatly around the pots formed a job which young men were proud to show their skill in, much the same as they now do in a due distribution of sticks and string in a specimen plant. But the Peaches and Nectarines (for I do not remember any other fruits attempted to be so grown in pots) were seldom, if ever, to be compared with the medium-class fruits obtained from trees grown in the ordinary way, and certainly never approached fruit of a first-class kind; and the same may justly be said now.

As orchard-houses, on what is called the improved principle, have existed for some years without in any one instance that I have heard of producing fruit from trees in pots that was fit to compete at a horticultural show with those grown in the ordinary way against walls or in Peach-houses, and at the most important fruit show in England—that of the Crystal Palace some trees sent there for exhibition, and occupied a prominent position on the tables, are pronounced by "A CONSTANT READER" at page 498 as "poor specimens of orchard-house culture, and ought not to have had a place in the Exhibition"—a disparagement, by-the-by, ten times worse than what I said about them, and one which tends more to confirm what I have before said of the inutility of Peach trees in pots, excepting for purposes of novelty, than "A CONSTANT READER," perhaps, intended it to do; and, as one of those who like to see a Peach larger than a Green Gage Plum, I thank him for pointing out how small those were that were exhibited at the Crystal Palace. At the same time, it is only fair to the grower to say that the trees had an excellent crop of fruit on, and showed as good an example of gardening as anything there.

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* By an oversight the publication of this has been delayed.—EDS. J. OF H.

Although I have no great pretensions to the character of a traveller, I generally ramble over some hundreds of miles each year, and am not yet too old to learn anything useful or new, and I may tell "A Constant Reader" that I would go a good long distance to see a dozen really good fruit on a tree occupying a pot only of the size of those exhibited at the Crystal Palace. I do not want to see potted trees standing on the ground with their roots occupying that ground in all directions. Such fruit are not grown on potted plants any more than some Grapes exhibited at a country show, and justly disqualified by the Judges, as detailed in The Journal of Horticulture a short time ago. But I believe the trees exhibited at the Crystal Palace to have had no "ground assistance," and as objects of cultivation they deserve every credit; certainly more than "A Constant Reader" (and he, too, an advocate for potted trees) gives them. Nevertheless, as a mode of growing Peaches, I saw nothing about them but what confirmed me in the opinion that it is a costly and uncertain way of obtaining fruit; and though it may not be quite so bad as the Irishman's horse that was bad to catch when turned out, and when caught good for nothing, still Peaches and Nectarines grown in pots of a size that one man can move about has a much closer resemblance to the two faults of the poor Irishman's horse than is often admitted. Those having enthusiastically entered into the growing of such trees and found it fail, have naturally enough an aversion to publish their want of success, and their silence makes the few successful ones the more vehement in praise of their hobby.

Let us now take a view of an orchard-house in another mode of cultivation; trees planted out and allowed to assume a certain amount of bush-like character, and we are told they bear well, and the fruit is good. This I have not the least doubt of—on the contrary, I have seen Peach and Nectarines in exactly the same condition twenty-nine years ago. A lean-to house, not called by the ambiguous name of "orchard-house," but simply a "Peach-house," had trees trained against the back wall in the usual way; and in the front trees were planted and trained (if the little pruning and tying they received could be called training) in the bush fashion. The house being a tolerably wide one with glass in front allowed this to be done pretty well, and the trees bore as well as trees in a general way did bear. How long before 1832 this house had been so occupied I cannot say, but the gardener, who was fast verging on seventy years of age, spoke of his father having had better crops than ever he had had: nevertheless, he did not admire the wild appearance the trees had, and often wished for a front trellis, as it was necessary to stick in stakes here and there to tie an unruly branch down a little, and another branch being, perhaps, tied to that one. The appearance was not nice, and the trees being old, perhaps twenty years or more, it was not easy without such tying to present anything like a healthy centre at all times. Cultivators dating back from 1859 may, perhaps, think differently, and it will be fortunate for them if they can avoid the evil here spoken of, and continue to have successful crops and healthy trees for a period of half the extent of those of the old gardener I allude to.

Having detailed what fruits were grown in years gone by in precisely the manner now advised by orchard-house revolutionists, it is only fair to say what I never saw attempted. I never saw Pears or Plums so grown. I have seen Apricots, and I believe Plums worked on the Peach, but it was only by way of trial, and I think was not successful; but Cherries have been certainly grown in pots from a very remote period. An old Archduke Cherry was once pointed out to me which had witnessed the passing away of several generations, and which tradition reported as having originally occupied a flower-pot; but whether so or not, some of the early numbers of Loudon's "Gardeners' Magazine," published in 1825 and subsequently, mention instances of success and failure in that way of cultivating Cherries, both being common then as well as now.

That this need not be further alluded to, I may also add that in years gone by I never saw a glass house resting on a hedge as a foundation, as is reported to be the case now in some places, brick or stone work being in every instance, that came under my knowledge an indispensable portion of such structures. I do not here find any fault of the means made use of to construct glass houses cheaply—on the contrary, I admire such as are in reality cheap; or, in other words, such as are after a lapse of years proved to be so, as we all know it is not everything which costs little money that is cheap, in the true sense of words, whether such articles be clothing, furniture, or glass house—time alone tries them all.

To those who have paid much attention to gardening matters the last quarter of a century or more, it is needless to ask how many objects, or things strongly urged at certain times, have fallen into oblivion. Some time after the first monthly gardener's periodical that came into existence, edited by Mr. (now Sir Joseph) Paxton, and Mr. Harrison, orchards, in miniature, were strongly recommended by some enthusiast that way, and pictures of Apple, Pear, and other fruit trees bearing bushels of fruit within the easy reach of a child were presented to view; and such like orchards were recommended as very good adjuncts to dining-rooms, where the company could walk out and partake of the delicious fruit fresh from the tree. This luxury is so far short of the one offered to notice at the present day, inasmuch as the present temptation has the advantage of a house covered with glass. This "very fine" state of things, however, like most other pleasant illusions had but a short duration, and miniature orchards in a short time vanished into still more diminutive proportion, having previously reduced the purses of their advocates in like manner. The only vestiges I have seen of these novelties was one near Bolton, in Lancashire, where a large space in a garden was covered over with wirework, to exclude birds, which, like all other baser members of the creation, were to be denied admittance to this paradise of horticulture. Unfortunately from some cause that the maker never expected, the trees would not grow and produce fruit, and the large wire cage was all but empty when I saw it some three or four years ago. Orchard-houses are certainly better than this, and, if in the hands of a gardener, he is sure to make them useful one way or another; if Peach trees refuse to bear respectable fruit in pots he will turn them out, and they will then do so I have no doubt. Only give him the house and he is sure to turn it to account; only I would advise those about erecting one not to be too sparing in expense at first cost; not to lay the plates or sill on the naked ground, but to have brick or stone foundation of some kind; and better still if they contrive to have this foundation to consist of pillars, so as to allow the roots of trees planted inside to pass through; timber posts may do, but if well done must be more expensive than brick, and Larch or Scotch Fir trees of 6 inches or 8 inches in diameter, last in such places not a day longer than they will do elsewhere, which at the outside may be some half-dozen years.

In taking a view of other whims to which horticulture, in common with everything else, has been guilty of, one of the first projects the introduction of cheap glass brought into view was glass walls. These costly appendages, however, soon gave way, and by degrees expanded themselves into full-sized houses, to which heating could be applied. Fruit in basketfuls was predicted from such transparent walls; but John Bull after the first impression could not see it, and glass walls are as rare as miniature orchards.

As years rolled on revolutions in other departments were threatened, and Spergula pilifera was expected to drive every inch of turf from our lawns; and a nobleman once told me, in serious earnest, that he feared if this Spergula was to get anything like a firm hold of any particular place it would drive all our grasses out of the field; and, like the Anacharis alsinastrum, which has become so great a pest to the canals, this Spergula would become the pest of husbandry, changing by its marvellous powers the very face of the earth. When this is to take place I do not assume to foretell, but its fitness to do so is about on a par with glass for fences, and orchard-house fruits for principal market supplies, that I anticipate the trio will go in unison.

Having said sufficient about the cultivation of Peach trees in pots in years gone by I may be allowed to say that I have not had any for eight or nine years; but before that time had several, which bore fruit of a medium description, or perhaps a grade or two below that, in the same way that similar trees do now in a general way, but at a great amount of trouble in watering and attending to. I may, however, inform "A Constant Reader" that I have seen several orchard-houses, and some in which the owner prided himself not a little in the number of fruits then growing on the trees, but an awkward apology was to be made when they were to be asked for at the proper ripening time. I have also seen others where conviction had done its duty, and the very ugly word humbug (I beg pardon for using it) was applied to the whole thing. Others who had, doubtless, in a certain manner become sponsors to the said orchard-houses, and desirous of their doing well, wisely turned the trees out of their pots into a well-prepared border and exultingly pointed out the result in the healthy condition of their trees, and the little trouble they caused—a matter in which I cordially coincide. At the same time, a less ambiguous term than orchard-house ought to be used; a savage's canoe might as well be called a man-of-war. An orchard is generally expected to produce fruits in tolerable large quantities: I have seen as fine Marie Louise Pears grown on open standard trees as would grace any table, and have seen these Pears sold at less than 4*s.* a-bushel. Query, How many bushels would half a dozen orchard-houses furnish? Yet we are told Pears can be profitably grown in these structures. But I have already said enough, and will leave the further condemnation of Peaches in pots to "A CONSTANT READER," since he has done more to disparage those at the Crystal Palace Show than I did; and in regard to the other fruits there, if he reads the heading of my article he will see that I did not assume to describe all that was at the show, but merely to point out such things as I thought worthy of particular notice. J. ROBSON.

CULTURE OF THE PINE APPLE.

(*Continued from page* 11.)

HEATING.—*Bottom Heat.*—Spent tanner's bark, 3 feet deep, makes a very excellent medium to plunge the Pine-Apple pots in. The heat sometimes, however, is too violent, partly through the want of due preparation; the watchful gardener will soon perceive this, and the moment he has ascertained that the heat is approaching the danger point not a moment must be lost, the pot must be lifted out and set on the surface, and allowed to stop there till the heat is on the decline; as soon as it declines to from 75° to 80° the pots may be plunged in Oak and Beech leaves. These make a good bed for bottom heat. Gather them and lay them in a large heap, turning them once or twice, and if dry sprinkle water among them; cover them with mats to keep off heavy rains, and in six weeks they will be ready for use. The heat from leaves so prepared lasts longer than when bark is used and is more agreeable to the plants. However, if, bark can be had easily place a layer upon the leaves to plunge the pots in.

Hot Water for Bottom Heat. This, when judiciously applied, is excellent, and can be regulated to a nicety in regard to temperature. Under the beds where the Pine Apples grow, whether in pots or planted out, there should be a chamber, and in that chamber a large tank filled with water, through which pipes filled with water and connected with a boiler should run, ascending and descending to have a due circulation. This method has the advantage also of being clean and tidy, and there is not at any time so much trouble in preparing the bed as is the case where bark or leaves are used. If the plants are grown in pots, there must be something to plunge them in, even when bottom heat is supplied by hot water. As that something is not required to produce bottom heat, of course the pit to hold it need be no deeper, or very little than is necessary to hold the pots level with the rims. Bark, or sawdust, or even sand, may be used for plunging in; the last being the cleanest and least liable to breed worms or other insects. I have seen Pines grown successfully by having a platform of boards with holes cut through to suspend the pots in as it were, over or in a chamber heated with hot water, and good Pines were produced thereby; but such a method requires so much attention and expense to keep up a regular bottom heat all through the year, that I fear its permanent adoption for the purpose is not likely to become general: still I conceive it is worth further trials.

Steam for Bottom Heat.—At Horsforth Hall, a place I have already referred to, the houses were heated by steam sent round the houses in shallow, tight, stone flues, and under one large pit jets of steam were thrown in similar cavities at intervals. The pit was filled with bark, and certainly the occasional throwing in the steam had the effect of keeping the bark warm much longer than if no steam had been used. The grand objection to steam used any way to supply heat is that before any heat can be obtained the water must be got up to boiling temperature (212°) in order to produce steam; whereas in the hot-water system heat is generated as soon as the fire is lighted; and, besides this, the expense of a steam apparatus is much greater, the boiler being very much larger, and the fireplace also of a proportionate size requires a larger amount of fuel: hence steam is now, I believe, quite gone out of use.

This completes the [illegible] on the proper habitations that the [illegible] should [illegible] growing [illegible] delicious fruit. He will [illegible] three [illegible] different [illegible] growth [illegible] provide for a supply of heat both for top heat and bottom heat; also means for giving air, and as in certain seasons the internal air should be duly supplied with moisture, he will obtain this by having evaporating-pans fixed on the hot-water pipes, or by syringing them when warm. The season when this moisture in the air is necessary and useful is in spring and summer, to promote growth and to cause the fruit to swell kindly and equally.

I may as well state on the rather disputed point of growing them in pots when of a fruiting age and size, or planting them out at that time of growth, that certainly the finest pit of Pines in fruit that I ever saw, were planted out, and that was at Trentham, when Mr. Fleming was gardener there. From his great success I must give the palm to the system of planting out. His fruit (Queens), chiefly were all large, well-swelled fruit. This point, however, I leave to be decided by further trials.

VARIETIES.

During the time that the pineries are being erected, the plants to furnish them should be inquired after. Great care should be taken to obtain them clean—that is, free from insects, such as the white and brown scale and mealy bug: hence it is requisite that the gardener should see and closely examine them, and being satisfied with them, he can order at once the quantity required, and have them carefully tied up, packed, and sent home. The fruiting plants should be sent with their balls entire. If those balls are carefully mossed round they may be laid flat in either boxes or square large hampers. If, however, the place is near enough, the plants may be tied up and set in their pots amongst bark or sawdust in a large-enough van, and thus they will travel securely and safely to their destination. Succession and nursing plants may have the greater part of the soil shaken off the roots, be packed in moss, and the leaves tied up snug, and in that state they may be packed in large, square hampers and sent safely by rail to any distance.

In selecting the varieties the cultivator will bear in mind two or three points. First, Are the Pines required for any particular season, for there are, happily, sorts that will be good in winter, and others that are suitable for summer; also, secondly, whether large or medium-size fruit are esteemed; and, lastly, if the fruit is required all the year round.

It may be, that my readers would be glad to know where they could procure Pine-Apple plants in quantities and qualities to furnish a moderate-sized stud of pineries. Some years ago I used to obtain Pine plants from a Mr. Davis, of Starch Green, near Hammersmith. His plants were always clean and well grown. I also have had good plants from Mr. Wilmot, of Isleworth, but he being dead I do not know whether his successor keeps up the stock. Messrs. Jackson & Son had, a few years ago, a great stock of plants in the range of houses they rented at Hampton Court. If there are any other growers of Pine plants for sale, all I can say for them is, Advertise your stock and you will get customers for them no doubt. Many private gardens dispose of their surplus stock of Pine plants. If I wanted such I would advertise for them at once, and I should not fear obtaining any quantities that I needed.

The best season for these exotic plants to travel is, as a matter of course, during the summer months. They might, however, be so securely packed in the earlier and later months of the year as to be conveyed safely during those seasons.

The Queen.—I place this good old variety the first. For, general purposes there are none better. It is dwarf in habit, free to grow, easily-excited to fruit, and, when well grown a good fair useful size, and its flavour is most excellent. There are some varieties of it—namely, *Ripley Queen.*—Rather stouter in habit, free to grow and fruit, rather larger in size than the old Queen, and by many esteemed superior in flavour. *Moscow Queen.*—Very dwarf, short broad leaves, and easy to fruit, flavour rather inferior, generally less in size than either of the former varieties. *Welbeck Queen.*—Very dwarf in habit, leaves rather long, curving downwards; spines very large and rather thin on the leaves: fruit medium, very firm flesh of a nearly white colour; flavour good. Keeps well. In estimation about second-rate. *Fairrie's Queen.*—I first saw this fine variety at A. Fairrie's, Esq., Aighburth, near Liverpool, in whose pinery it fruited, I believe, for the first time in England. Habit dwarf and compact, leaves short and rather curving downwards, fruiting-plants not occuping more than 15 inches square; fruit large, handsome shape, rather globular in form, firm in flesh, very juicy and well flavoured [illegible] first-rate variety for summer [illegible] but [illegible] apprehend [illegible] good for winter.

Black Jamaica.—Habit, rather tall with long leaves. Fruit, medium size; pips, flat; shape, a long oval; flesh melting, flavour most excellent, as good in winter as summer, keeps well. I know no Pine so good in flavour as this fine variety. The gardeners in the north of England call this variety the Montserrat, but as the best growers in the south name it the Black Jamaica, I think that should be its general name. The *Montserrat* is something like it, but more pyramidal, and soon decays after it is ripe: previous to that decaying it is equal to the other in flavour. I believe it is now out of cultivation.—T. APPLEBY.

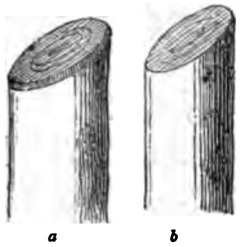
(*To be continued.*)

PRUNING LARGE LIMBS OF FRUIT TREES. VARIEGATION OF PLANTS.

SOME time since, in your No. 26, you observed, "We cannot advise about the wall trees without more information. Cutting off branches of Peach, Nectarine, and Apricot trees, 4 inches in circumference, requires much discretion."

Now, I have cut leaders and side branches of various sizes, from 8½ inches in circumference, with perfect success; and in every case I find the bark grows over the cut. Many years ago, when in Manchester, I was shown the cut by a gentleman, a schoolmaster, who was passionately fond of trees of all kinds, and though he did not to my knowledge cut fruit trees in the way I beg to bring to your notice, I thought I would try the plan on the stone fruits, and see if it would prevent the "gumming." Well, the first year it was good, second ditto, and third the same; so now the public shall have the advantage of the schoolmaster's cut, for it is not my own, and I do not intend to play the Jackdaw among Peacocks, and strut off with plumes and honours not my own.

We learn as much by the eye as by the ear—I have, therefore, sent two little drawings, *a* the right cut. It will here be seen that the bark is bevelled down to the wood; it is easily done, and no gumming takes place, no matter what time of the year the cut is made; *b* is a clean cut, and the branch will gum unless the wound be rubbed over with lime, or some caustic to burn the edge of the bark. If what I have written is not clearly understood I shall be happy to offer any further explanation.



In the summer of 1860 I found growing in my shrubbery a most beautifully-variegated young Oak. I showed it to Mr. Standish who thought it worth trying to see if the variegation would stand. He took it up himself and shook out all the poor sand from the roots, for it grew in a damp, shady, sandy place, and potted it in good soil. This year the variegation had nearly grown out, but I have taken it and put it into poor sand again, and we shall see if it returns to the variegated or comes green. As it may be of interest to Mr. Beaton I will give him the plant if he likes to experiment on it, for his word has authority, whereas I am simply an unknown quantity.—X.

[Bevelling the edge of the bark is a very old mode of finishing off the stump of an amputated branch. We practised it forty years since, and then it was an old practice with our teacher. When we spoke of "discretion" being required in cutting away the large branches of Peaches and other trees, we had not in contemplation the fear of gumming, but the general disturbance of a tree's constitution, often occasioned by severe amputations. Many trees never acquire a vigorous growth afterwards.—EDS. J. OF H.]

TIMBER FOR GARDEN STRUCTURES.

No doubt when good sound oak is used for door-frames, sills, and wall-plates, and best Petersburg red deal for rafters, sash-bars, &c., a very durable house can be made with such materials; but I am inclined to think one equally as good, and perhaps better, can be built with Pitch Pine of best quality.

My own experience of it is slight; but your correspondents speak of it as being as durable as oak for posts, staircases, &c., and amongst others whom I have mentioned the subject to, the Messrs. Smith, nurserymen, of Dulwich, give it an excellent character. They have known it in use for many years; and I saw, when at their nursery a short time ago, they were using it for making and repairing frames. At any rate, I think of trying it for a span-roof house, 30 feet by 50 feet.

I quite agree with those who advise a free use of paint when jointing the parts together, and in contract work this is not always properly attended to. Ours is not done by contract; it is done on the place, and the carpenters have no objection to a paint-pot standing beside them.—JOHN STEVENS, *Gardener, Malvern Hall, Solihull.*

WINTERING DELICATE STANDARD ROSES.

WE have some new standard Rose trees from France. They have flowered this summer, but look delicate, and we have fears for the approaching winter. We should be much obliged for hints for protecting them during the approaching winter. Our aspect is exposed on the north-west coast of England, and very bleak and windy.

[There is no better plan for protecting delicate standard Roses than that which Mr. Rivers hit upon, and recommended for Bourbons, and such others as are like them. The plan is to take them up carefully and place them behind a wall—that is, on the north side of a wall, and the heads leaning against it. The roots, or over the roots, he mulched with some dry litter, and with mats he secured every bud when most Roses were more tender than the present race. If such Roses were planted out again at the end of February, they would bloom as freely as if they had not been moved, and after three years of that treatment any Rose which would not stand our climate ought to be frosted and done with. We followed Mr. Rivers' plan, and found it most useful.

The next best plan is to stuff hay, or straw, or fern, which is better, in among the branches, and make it conical like a boy's rush helmet; but the standards must be well staked. Thirdly, and the most expensive plan, which is perhaps the surest, is to make a triangle with three long stakes higher than the top of the Rose tree, fasten the tops of the triangle over the centre of the Rose, and thatch the triangle like the thatch of a cottage-hive, and stuffing dry fern or hay among the branches if the winter prove very severe.]

OXFORD MILLS' CELERY AND FLOWER SHOW.

ON Saturday, September 14th, the workpeople in the employ of Hugh Mason, Esq., held a Horticultural and Floricultural Show in the lecture-room of the neat and commodious institution, recently built by that philanthropic and public-spirited gentleman, near his extensive mills. The Exhibition comprised an excellent collection of flowers and fruit grown by the workpeople, with a number of choice plants and flowers from the conservatories and gardens of Thomas and Hugh Mason, Esqrs. The show-room was beautifully adorned with a large number of devices in flowers, which were so well arranged that they would have been a credit to professional hands; but several of them were made by the wives of the workpeople, and the colours were so judiciously blended as to produce the most perfect "harmony of contrast." There was a little neatly-arranged stand table worked in red and white flowers, save the top, which, with purple and white flowers, was made to represent a draughts-board; another was in the form of a chandelier, and, although a pretty piece of floral ornamentation, it failed in obtaining a prize through its non-arrival in time for competition; but George Charlton, Esq. (who accompanied Hugh Mason, Esq., and other gentlemen during the evening) was so pleased with the design that he gave it an extra prize equal to the first; that which obtained the second award was in the form of a palm tree, and was very pretty, but not so well arranged as the others. Besides these, there were other designs, amongst which we particularly noticed one in the shape of a proud Peacock, with its extended fiery tail spreading around as though it were alive, and in search of Sol's benignant rays to reflect his light upon it. There were some very good Apples and other fruit exhibited, and specially observable was a plate of Raspberries, grown by Mr. W. Tipping, manager of the mills. They were splendid fruit for this time of the year—or, in fact, any other time. There were also some splendid Dahlias, some early Crocuses, and numerous other fine specimens of plants, flowers, and vegetables. Indeed, we may say that everything was very good, and, the Show being free to the public, it was visited by large numbers during Saturday and Monday. On the evening of the former day a brass band was in attendance, and on that of the latter a party of tonic sol-fa singers were engaged, conducted by Mr. T. Woodcock. The chief prize for Celery was the very handsome sum of £3, given by Mr. Hugh Mason; his father, T. Mason, Esq., also gave a prize, the others being raised by the workpeople. The Judges were Mr. John Moss, Mr. William Worrall, and Mr. John Hague, gardener to Mr. Hugh Mason; and we are glad to learn that their decisions gave the completest satisfaction. We had almost forgot to allude to the fact; but talk about Celery sticks, and there has been a good deal of talk about them lately, why there was one here (not for competition) which weighed upwards of 13 lbs. The show-room was set out and embellished with pictures and banners, and we saw that the reading-room had just received an additional attraction by a large photograph of Hugh Mason, Esq., subscribed for by the workpeople, and forming an appropriate companion ornament to the address lately presented to him. Several of the cottagers had flags floating from their windows, large colours were hoisted above the mills, and everything was done to render Oxford as gay as possible, and not without success either, as the *tout ensemble* clearly demonstrated. It would be well if other large employers of labour would encourage horticultural pursuits, if only for this season, by breaking up some of their land to find their workpeople employment this winter. They might let off pieces as Potato land, which could be turned over during the winter, while the mills are running short time, and be in readiness for cropping in spring. This would be a much better plan than for the male operatives to be walking about with their hands in their pockets, and we trust the suggestion will receive that consideration which its importance demands.

On Saturday, October 12th, the cottage gardeners who competed with Celery, flowers, and fruit, in the reading-rooms connected with these mills, on Saturday, the 14th ult., held a tea-party in honour of the event, when about 200 sat down to an excellent tea and sandwiches, to which they did ample justice. After tea, Mr. John Hague, Hugh Mason, Esq's. gardener, was called to the chair, in consequence of Mr. Tipping being indisposed.

The Chairman, on rising, said he felt a little flattered by occupying the chair at a tea-meeting of gardeners, their wives, and friends, and was glad to see so many people patronising gardeners. He thought he might congratulate the Oxford Mills' cottage gardeners on the success of their first Floral and Horticultural Show, and hoped to see them next year improving on what they had done so well this. This being a gardeners' festival, he would say a little about gardens and gardeners. Some people made a point of saying that there was no art in gardening. Now, he (the Chairman) supposed that those were the people who took their sacks early in a morning and helped themselves to the cottage gardeners' Onions and Gooseberries; and if he should ever catch one of those people he would be inclined to Lynch law him, and feed him on Onions until he was fairly satiated. He was glad to see so many cottage gardens in the neighbourhood, for they were good places for the factory-workers to spend their leisure time in, and a little gardening was beneficial in many ways. A garden was a good school in which to learn patience, perseverance, and order, for so that nothing might be done in a hurry. The gardener had to abide by certain laws, which would rarely allow of any exception or breaking. He might learn patience from a common Gooseberry tree, and see something worth the trouble by watching one put forth its tiny leaves in spring, and then see it put forth its bloom; then see its fruit form, and watch it from the size of a pin's head until it became the full-grown ripe fruit; all these things would teach him that Nature performed her great and wondrous works in no hurried manner, but performed all with an unerring certainty. A garden taught patience by the gardener seeing his fruit, flowers, and vegetables, grow better by daily watching and tending them, and protecting them from their enemies, and giving them help in the form of water and manure; or, as he (the Chairman) would call it, giving them food, drink, and clothing. They would learn that nothing could be done without patience; and soon learn that success in gardening as well as in other things, required a deal of perseverance. The [illegible] if he must be successful he would see that his work must be done at the right time, and everything be in its right place. Weeds should not be allowed to choke the crops; and he would see how much better it was to have good things, which only took up the same room, whether they were in the garden or in the mind. To the factory-worker a garden was a good place for him to resort to in spring and summer, at the end of his day's labour, which was generally very monotonous in its character. In the garden he was brought in contact with Nature, whose pleasing changes and forms never stood still. An essential advantage was gained by the factory-worker in having a garden; he could have nice fresh vegetables, instead of vegetables that have travelled a long way, and were often scarcely fit for human food; and a garden was a good place to pass leisure hours in, now that the hours of labour were shorter than they were in times past, which he, for one, hoped would never come again. Although factory operatives worked less hours than formerly, they would still want something to do; for a man grown up was like a child, he must have something to do, even in his leisure hours, and if he could not do good things he generally did bad ones. He was glad that his worthy employer had given the operatives of Oxford Mills something towards encouraging them to make good use of their leisure hours; and he (the Chairman) should be happy to assist them in their efforts at cultivating the soil. After speaking very highly of professional gardeners, and passing some humorous remarks upon the privileges of gardeners, he sat down amidst loud applause.

The choir (which is mostly composed of the mill hands, and lead by Mr. Thomas Woodcock) gave some very choice glees and songs, for which they were deservedly encored; and a number of recitations were given, when votes of thanks, with three times three, were given to the choir, and also to the tea-makers, reciters, and Chairman. The room was then cleared, and a quadrille band introduced, to which the young folks danced right merrily; others played at various games in the reading-room, while a number of the older hands sang and recited for one another in the smoking-room until eleven o'clock, when the company broke up, after having spent a very pleasant evening.—(*Ashton Reporter.*)

WINDOW CONSERVATORY.

A lady whose residence will, probably, be at Torquay, will be grateful for information respecting the construction of a conservatory. It is intended to alter and improve the house, and she wishes to know if the sash-windows of the drawing-room and dining-rooms cannot be made available for the front of the proposed conservatory. The situation of the villa is very high and exposed, but as the conservatory will receive every ray of light and gleam of sunshine throughout the day, it is thought that the building will be light enough with broad piers between the front lights. The question she desires to be answered is, How broad might the piers safely be built, and what glass should be used for the roof?

[The piers, pillars, or pilasters, might be from 18 inches to 30 inches, according to the height. If the front of the house was to be 10 feet in height, from 15 inches to 18 inches would be wide enough not the make the house look heavy. However, it would be as well to arrange according to the character of the villa. The sashes may do very well. The roof may be of Hartley's rough patent, and no shading will be required then.]

OVER-VIGOROUS ESPALIER PEAR TREES—MEALY BUG.

I have two espalier Pear trees in my garden, which from improper pruning have not borne any fruit for several years. Instead of producing fruit-spurs, they have sent out in their place a number of strong wood shoots, which, of course, are perfectly useless. In order, therefore, to bring them into a fruit-bearing state, would it be advisable to cut off the horizontals tolerably close to the main stem, and thus let them send out new wood for future training? or would it be advisable to discard them altogether, and plant a new tree or trees in their place? If the latter, what Pear would you recommend for espalier training?

My pyramidals (Apple-trees) are infected with the mealy bug. Will an application of linseed oil destroy them?—Rev. A. K. H.

[illegible] buildings or other trees.

root-pruning would be more likely to improve them than anything else. Certainly if they be healthy they ought not to be destroyed, but if the branches be long and unsightly, it would be advisable in addition to root-pruning to cut the trees down and graft them afresh, when you might have several kinds on one tree, the branches being simply cut off at their base, and grafts put in at the proper time. If your situation be south of the Trent, the following kinds will do in most places:—Marie Louise, Ashdown Park, Winter Nelis, Ne Plus Meuris, Glou Morceau, Beurré Diel, Passe Colmar, Duchesse d'Angoulême, and several others. Under any circumstances if the tree has become unsightly, it would be advisable to cut it down and graft it with some of the favourites of the district, adding some others which may be equally good, or better, but may not have been tried, and if the soil be wet and sodden, better take the trees up entirely, and raise them above the surface, draining the ground at the same time, as the Pear seems to require a drier soil than any other of our hardy fruits.

Mealy bug is a very difficult affair, the only known remedies for it being also hurtful to the tree, but linseed oil is, perhaps, the least so of any. Rub over the affected parts wherever the insect makes its appearance, and if taken in time with young trees, it will check the pest; but with old, unhealthy trees it is hopeless to restore them to vigour again. It would be better to destroy them and plant others, not in the same place for a year or two, unless you take the trouble of exchanging a cartload or more of the soil they are grown in for fresh mould. Salt water, turpentine, various chemical substances inimical to animal life, have all been tried to eradicate this pest, but the injuries done to the trees were worse than the effects of the insect itself, that we fear you must patiently watch its progress, and drop a little linseed oil into each place as it appears, and not by any means coat the tree all over with it as a preventive, for in so doing you would seal it up.]

FLOWERING-BULBS IN JANUARY.

In reference to your correspondent "Clericus," let me just say that my bulbs, put in a week before this time (October 23rd), last year, began to flower before the end of December, and were in full bloom all January; those in the soup-plates, I mean. They were in a sitting-room, only just above freezing at night in that cold weather.—E. A. M.

VENTILATING A GREENHOUSE—WINTERING GERANIUMS AND FUCHSIAS.

I have a lean-to greenhouse about 18 feet by 12 feet, with a very high pitched roof. The high pitch causes the sliding sashes to run very heavily, and they have remained closed nearly all the summer, the trouble of opening and shutting being so great. The Vines, three in number, have borne well, but are eaten up by red spider, the result, my gardener tells me, of deficient ventilation.

Would a sliding shutter 3 feet by 1 foot 6 inches inserted in the back wall as near the roof ridge as possible, supply the place of the sliding sashes, or be only a useful supplement to them? I cannot put two shutters as another roof would interfere.

I have taken up some of the old bedding Geraniums, potted them, and placed them under the stage of the greenhouse. Will they do there, especially when the house is heated, as it is occasionally, by a hot-air flue? Will that not excite them into growth? How about watering?

May I turn Fuchsias out of flower on their sides under the stage, and withhold water for the winter?—Cardiff.

[We do not think one shutter will be enough under the circumstances. Instead of cutting your wall why not fix your heavy sashes, and have every other one so much shorter as to have ventilators of 18 inches or so in each alternate sash at the top, which might be hung on pivots to shut and open easily with a string. Your one large shutter in the middle of the back wall might do, if you could open the angular spaces at the ends above the doorways close to the apex of the roof. With plenty of front air on, these two end openings and the shutter in the middle, you may keep all right, and set the red spider at defiance. Without such means half of the sashes at least, or ventilators in them, should open at the ridge.

See "Doings of the Last Week," as respects Geraniums. If watered now they will need little more before spring. We presume you have taken off the leaves.

The Fuchsias if to have no water will do better standing, instead of the pots being laid on their sides under the stage, as in the former place they will absorb moisture sufficient from the ground. If you must lay them down, you had better water them previously, and if pots are placed above pots, cover them over with moss to keep them from getting too dry.]

MYRTLE INJURED LAST WINTER.

Will you inform me of the best method of treating a Myrtle under the following circumstances?—It is 12 feet or 14 feet in height, against a wall due south. It has hitherto remained out all the winter without any protection; but last winter the frost injured it very much, and, consequently, in May I had not only the dead wood cut out, but the tree was lightened of a considerable quantity of its healthy wood, but being unwilling to diminish the height, I left the wood at the back. This summer it has come out vigorously where it was cut, but the other wood, though perfectly healthy in appearance, produced yellowish, sickly foliage. This autumn it has gradually assumed a more healthy hue, still it is unlike the vigorous bottom shoots. Under these circumstances would you defend it carefully from severe frost this winter, in the hope of its coming out healthily in the spring, or would you reluctantly sacrifice the growth of years, and reduce the tree to a common shrub?

[Touch not a leaf of that beautiful Myrtle till the end of next April. Then, or when the new growth of 1862 is just 1 inch long, stop every one of the new shoots or new growth of this season near the bottom, and do not allow any part of the bottom to grow higher than where you stopped till the top of the plant is in full vigour again, if it were not so for the next two years. But you may expect to see the balance of power between the top and bottom restored by next August. We have done the very thing more than once, and we saw a favourite Myrtle sacrificed this last summer for not doing it. Sometimes a very strong shoot breaks from a dry part of the top shoots, a robber as they call it, that you must not allow, but stop it at 6 inches or 9 inches, so as to equalise as much as possible the fresh growth all over the top part of the plant.]

EDGING MATERIALS FOR WALKS.

For the information of any of your readers able to procure it, the "Kerridge," or self-faced flagstone, of course set on edge, makes a firm, durable, and neat border.

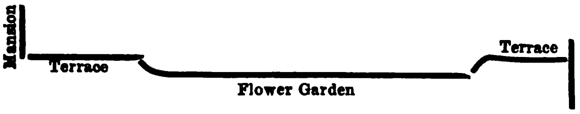
I have this year laid down a quantity procured at Cooke's quarry, Bollington, near Macclesfield, which cost, delivered by canal 120 miles from the quarry, 6*d.* per yard. It is sent dressed on the edge and jointed; and in lengths of 1 foot to 4 feet, by 9 inches to 12 inches, by about 1½ inch.—K.

A FEW DAYS IN IRELAND.—No. 3.

THE VICEREGAL LODGE, PHŒNIX PARK.

There is little of the magnificently royal in the outside of the unpretending, modest-looking building appropriated as the residence of the representative of Majesty in Ireland. We have been assured, however, that the internal arrangements are sufficiently capacious and suitable, to have met the requirements of the many celebrated noblemen who in turn have occupied the position of Lord Lieutenant. Shut in from the bustle of the external world, embowered in trees and shrubs, it seems just such a place as poets and philosophers might long for, if permitted to long at all, and no doubt by its very quietness has helped to soothe down many a heart wearied and distracted by the turbulence, the anxieties, and the cares of political life. There seems to be something peculiarly fitting, that such a lovely spot should now be occupied by the Right Hon. the Earl of Carlisle, not more known for his patriotism than for refined benevolence and true warmheartedness. Now, when the foolish strifes and deadly enmities of bigoted partisanship are fast dying out, never again it is hoped to be aroused into action, and when neighbour as he meets neighbour, and sees so much that is worthy of his respect, wonders he could not see it all before as well as now, just because he could not perceive that other men were as anxious as himself to secure the public good, though the means adopted might not be exactly identical. More of the "charity that thinketh no evil," would be exemplified, when we act on the fact, that the same goal may be reached by many a different route.

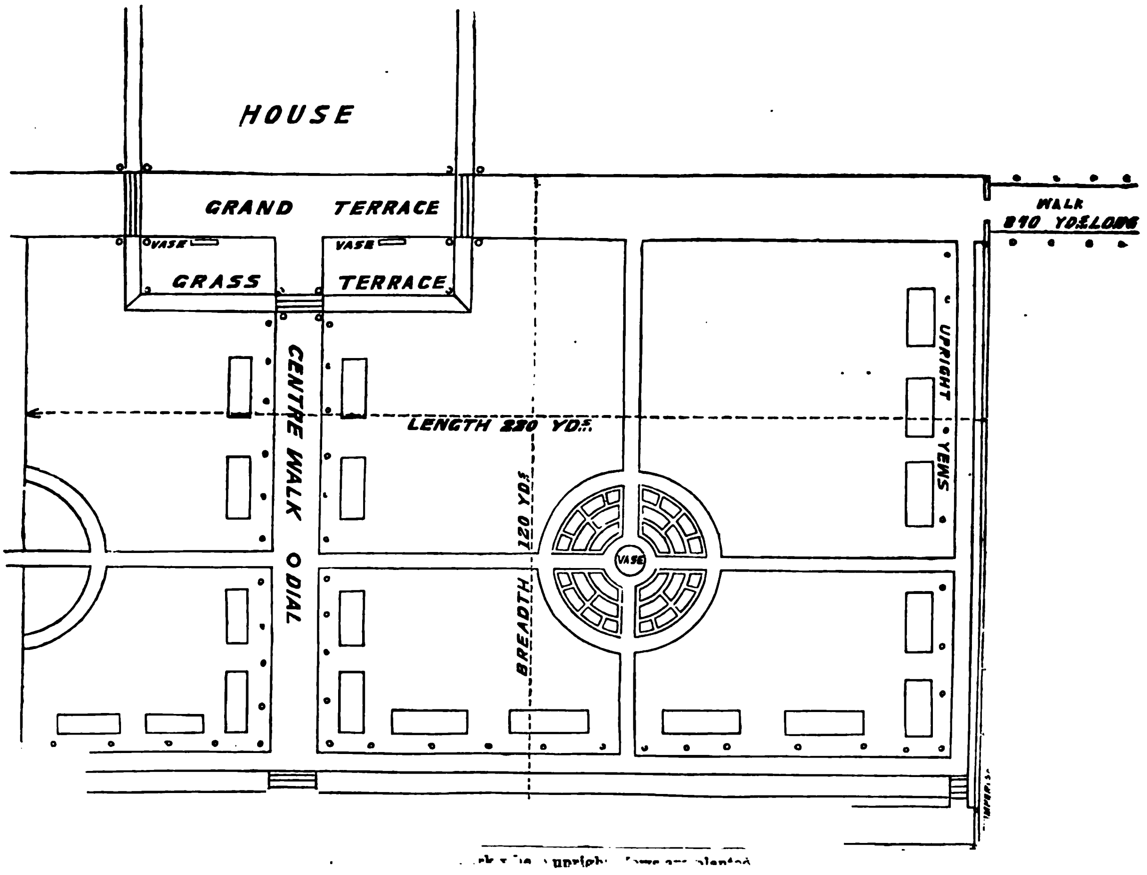
The garden front has more of the dignified, but in unison with the dignity the chief features are—completeness, quietness, and repose. The dignity is chiefly secured by a broad terrace of gravel and grass, extending as far as the garden front of the mansion. This terrace is some 3 feet above the level of the flower garden, in front and on each side. A broad walk of the same width as the gravel on the terrace, with stone steps at each side, runs the whole length of the flower garden. The walk on one side going on to a cricket ground, shrubbery, Pines, &c., and on the other side next the kitchen garden, after passing the boundary balustrade, opening to a walk, narrower, though still wide, extending in a straight line 370 yards, and adorned on each side at regular intervals with plants as regular in outline of fine-grown, healthy Irish Yews. The middle of the mansion acts as the measure for dividing the flower garden in two by a wide gravel walk, with suitable steps at the incline. A fine dial in the centre of that walk, and steps again at the extremity to take you up to a narrower terrace bounded by the balustrade and vases. The accompanying section will show this, and also how such terraces, and the simplicity in the details, give a dignity to the garden front of the mansion. (See the plan of half the garden). Be pleased to notice how the fine Irish Yews are placed at regular intervals at the sides of the walks.



Then the first sight of the garden, even without going over it, which we did not do, shows its completeness in itself. The straight lines in such a position, the dividing it into two equal parts, and the boundary balustrade make all this manifest. No mere scattering of beds in front of a mansion or anywhere else, will ever produce such a feeling of unity and wholeness. Where the position will admit of it, a flower garden near a house will never suffer from a clearly-defined boundary. There is no chance, then, of a good plan being spoiled by one man making a few more flower-beds here, and sticking in some more shrubs and trees there, just because he has taken a fancy to do so. Perhaps, the idea of completeness in connection with seclusion and quiet, may have been carried too far, as we noted the tops of young trees planted outside rising above the line of the balustrade. There might be good reasons for this, which we neglected to see. There were plenty of openings to admit the beautiful surrounding scenery in the Park and beyond, and there might be a reason for concealing the wall from the outside, more potent than hiding anything outside from the inside; but even then the trees should not be too near the wall, nor be prominent features from the terrace, unless objects really worth looking at.

What pleased us most of all, was the seeming quiet seclusion of the mansion so nicely carried out in the feelings of rest and repose excited by the garden itself. How distracting to the mind already jaded with care, to stand on either of these terraces and see the whole space a mass of gorgeous colour with hardly space enough between the beds for the one to be distinguished from the other. In some positions this would not be so undesirable, but here we think such an arrangement would have been wholly out of place. The great charm of this garden is the breadths of fine green turf for the eye to rest upon. Not but when we saw it in the middle of September, there were not abundance of flowers. The parallelogram-beds next the walks

PLAN OF THE FLOWER GARDEN AT THE VICEREGAL LODGE, PHŒNIX PARK.



[illegible] upright [illegible] planted.

[illegible] a [illegible]ming effect to [illegible] ula [illegible] entre [illegible] those friends who must [illegible] mplici [illegible] Perhaps it.

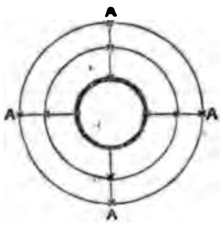
might have lessened the simplicity, if the parallelogram-beds had been shorter, curved inwards at the ends, and a circle placed between every two; but it would have admitted of more variety in outline, and more variety not in planting merely, but in the style and manner of planting, as even level masses of colour, however beautiful, if appearing all of the same height, become monotonous to the eye. The upright Irish Yews so far prevented this drawback.

The useful garden is large, we forgot how many acres, well surrounded, and we think divided by walls into three unequal divisions. The lesser of these contains what may be termed the Melon ground, pits, small houses, and ground for standing plants in summer, and the residence of Mr. Smith, the much-respected gardener, with whom we had not been five minutes without experiencing not only that we had made a new friend, but one with whom we could use the familiarity and freedom of an old one. Some business arrangements prevented us getting as much information and that comparison of ideas, at all times so pleasing, as we could have wished. As we have been dwelling upon flower-gardening matters, we may here state, that if bedding plants were planted in the flower garden in hundreds, they must in the kitchen garden have been turned out in thousands. The sides of the main walks were thus rendered ornamental, showing not only the love for such flowers in masses, but that there was plenty of room to spare besides for the useful as respects the kitchen and the dessert table.

The entrance from the Melon-ground quarter to the larger garden showed a fine range of glass houses 400 feet long, with wide borders, and the front of the border a straight-lined ribbon. A broad ribbon occupied the other side of the walk much longer than the range of houses. On your right hand as you entered, in front of a wall of healthy Apricot trees, was another ribbon, and the opposite side of the walk was planted in a similar manner. The plants in front of the Apricot-border were all naturally low, or made so by nipping and pinching, and a good space next the wall was left unplanted. There were five rows beginning at the Box edging, White Variegated Alyssum; Gazania splendens, fine; Purple Spinach, of Henderson's, pinched down; Tropæolum Stamfordianum, dwarf and full of bloom, though with us it grows too strong; and seedling Cineraria maritima for the back row, showing the same grey instead of silvery appearance as they have done with us, as mentioned a short time ago. The other side permitted of taller plants at the back.

Then of the long wide border 15 feet, opposite that in the front of the houses, the back row was a dense mass of Sweet Peas, then Hollyhocks in good bloom, followed by distinct rows of Ageratums, white Verbenas, Scarlet Geraniums, Purple King Verbena, Bijou Variegated Geranium, Beautié de Paris Verbena, a blueish-grey, Mangles' Variegated Geranium, and Cerastium tomentosum next the Box and gravel. We forget how many rows were on the borders in front of the houses, but they did not occupy above half the width, and beginning with Cerastium next the Box, the rows were confined to plants of low growth, and similar to the opposite side, as far as they went. For ourselves, though the one border would not have been so striking without the other, we do not think that such borders in front of houses are to be recommended, unless at the very front, and that not so much because the plants starve the border, as because they keep the sun and atmosphere from acting on it. The rows were farther apart than we are in the habit of planting them, and, therefore, every row was clear and distinct from end to end.

We now return to the Melon ground, having disposed of bedding plants before going farther, to have another look at a quantity of splendid Chrysanthemum plants plunged in ashes to save watering, which took our eye on entering the garden-door. Many of these plants were in 24 and 16-sized pots set inside larger ones, and then plunged, and ranged from 3 feet to 4 feet, and even more across, bristling with shoots all over just knotting for bloom, and many of the widest plants were not much more than 1 foot above the rim of the pot. These plants were chiefly struck in the early autumn of the previous year, were potted and grown on slowly all the winter, getting stopping as they required it, received their last potting early in summer, and were regulated and stopped until the beginning of July. The training is effected by two rods of wood laid at right angles across the pot, and as far beyond as the shoots are expected to reach. These rods are securely fastened to the rim of the pot by a string or wire below the rim, and a smaller wire binding the rods and the wire together. A stout wire forming a circle is fastened to the four ends and the frame is complete. If the circle is large—say 3 feet, or more, in diameter, a ring or two more of wire divides the space inside. To such frame the main shoots are tied as they grow, and then the upright flowering-stems need no sticks whatever, only a little arranging with threads to keep them regular. The plants are kept rounded in the centre to give them a graceful outline. Of course such plants are liberally nourished.



A, A, A, A, the four ends of the two crossed sticks. Centre circle-pot to which stakes are fastened. Two outside circles wire forming the training-frame.

Besides great quantities of such plants as Chinese Primulas, Cinerarias out of doors, and in cold pits, in the heated pits and houses, there were fine plants of Thyrsacanthus rutilans, Euphorbia jacquiniæflora, Poinsettia pulcherrima, Justicias, of sorts, and other things for winter blooming, and a very plain and serviceable low-spanned house appropriated to Cucumbers and Melons trained to a trellis about 15 inches from the glass. The beds on each side were heated by hot-water pipes below them. There were upright pipes for letting up damp heat as required, but chiefly for giving moisture to the roots, and there were pipes through the bed, near the pathway, communicating with openings outside, so that the air so admitted should be heated before rising into the house. The chief peculiarity, however, and one involving economy of fuel, was that the flue from the boiler runs beneath the pathway in the centre, and the flue being strongly built, and covered with strong tiles raised on the edges, so as to hold water, there was never any want of a moist atmospheric heat. This only proves what we have often stated, that the proprietors of small places may go to large places, even regal ones, to learn economy in management.

The fine range of houses in the large garden are curvilinear. A great change and improvement is being gradually carried out. Formerly they were only 11 feet wide, and there not being too much ventilation at the top, we should judge that the heat must at times have been excessive. They are now being enlarged to 17 feet in width, by taking the back wall farther back, leaving the first roof as it is, supported on pillars, and connecting it with the new back wall by a hipped glazed roof, from which abundance of air can be given, and also space afforded for cultivating many things against the back wall, with a good share of light coming to them.

One of these houses was filled with fine, healthy, well-grown Pelargoniums, designed to bloom early in spring, and that without anything worthy of the name of forcing. The plants had been struck in 1860, potted in spring, stopped as needed, no flowers allowed, and now they are nice bushy plants some 30 inches in diameter, with shoots of equal strength all over, that will ere long knot for flower-buds. Another house called the Geranium-house, was filled with large and older plants, perfect pictures of symmetry, now not much more than 1 foot in height above the pot, and from 3 feet to 4 feet in diameter at the base, trained exactly as stated above for the Chrysanthemum. Many of these had been cut down last August, or rather pruned back, have been grown on slowly ever since, no flowers allowed to come, and now they are well regulated with stout shoots of about equal strength, and will bloom in May and June of next year, when we were assured they would be fully 5 feet in diameter at the base. These and those at the Chief Secretary's, were the best plants, we think, we have ever seen. It will not be forgotten, however, that the best part of two years is bestowed on getting them to the flowering state. As soon as a young plant is struck, potted off and stopped, the training commences. Many gardeners have told us how splendid these, and those treated much the same way at the Chief Secretary's, look when in bloom, and no stake and hardly a tie is perceptible.

There is a house also devoted to hardwooded plants, as Acacias, Heaths, Epacrises, and many other things, promising abundance of bloom. The workmen were engaged with others from which the fruit had been removed. In one late house there were some nice Black Hamburgh Grapes, and in another a heavy crop of Muscats just changing colour, and getting yellow. In one vinery 70 feet long, a Vine planted in a corner at one end inside was destined to fill the house. There had been several plants, as Heliotropes, and other things planted close to the end of the house. Mr. Smith thinking the Grape (Black Hamburgh) better than usual, had these plants all cleared away, and as good loam, &c., as he could get put about the roots, and the branches of the Vine divided and trained so as to grow longitudinally along the house some 2 feet apart. It has been spur-pruned. It already occupies more than two-thirds of the house, and the young wood at the point of every spurred stem is not only strong, but very equal in strength, short-jointed, and the buds bold and rounded, showing that the Vine will shortly fill the house. The bunches were regular, and of a good size, but slightly tarnished, here and there, from being syringed with water that had left a little sediment. Many to avoid this, never syringe at all after the Vines are in bloom. The flavour was delicious, but we could not say it was thoroughly distinct in this respect without tasting other varieties at the same time. Without this is done we have no faith in the dictum, "Never tasted anything so nice." The houses were heated by pipes on the level. The flue from the boiler was also used.

In what we may call the second garden there was a range of glass in several divisions 250 feet long. There was here an early vinery just pruned, the wood looking nice, and three Peach-houses, from which the fruit had been all gathered, but the wood showing that a heavy crop had been obtained, and the wood in the best possible condition, ripe and ripening, neither too strong nor too weak. These Peach-houses 13 feet wide and 12 feet in height at the back, had the trees trained up 16 inches from the glass, and few plans answer better, and none is more simple.

In front of these houses two large quarters were devoted to dwarf and pyramidal trees of Pears, Apples, Cherries, &c. Dwarf trees round the walks, especially young ones, had grown so well that Mr. Smith contemplated raising and planting again to check their vigour. The walls were well supplied with trees, and most of them, especially the Peaches, showed signs of ripening their wood kindly. Fruit of all kinds, except early small fruit, was scarce this season. The Strawberries in beds, and also in pots, were looking strong for next season. We suspect a great number of Strawberries are forced every season. The Strawberry-pots were plunged in the ground.

We may just add, in conclusion, that those cannot-be-done-without-things—vegetables—were in great plenty and good condition. We forget as to Asparagus; but there are many places in which this will not grow, though it flourished some twelve or fifteen years ago. Among other things extra good were late Peas, and especially Hair's Mammoth Pea, true, which was very fine, with not a sign of mildew about it. The grand secret, Mr. Smith told me, was manuring with rotten dung as heavily as for a Celery-bed. We expect it will bear until the frost cuts it down. R. Fish.

GROUND OR EARTH-NUT.

Can the Editors inform me what the little bi-lobed plant is that school-boys call the Ground-nut, and which they dig up with their knives and eat in large quantities? It formerly was found in Rutlandshire. I wish to obtain a supply for experimental purposes. If any information could be kindly furnished me where it is probable it may be obtained, I shall esteem the favour. It is not the Orchis mascula, which, I believe, was formerly used for salep. If I remember, the plant had a small white flower. Could it be the Saxifraga granulata?—M. D.

[It is *Bunium denudatum*, sometimes called the *B. flexuosum* and *B. bulbocastanum*. It has many English names—viz., Earth-nut, Pig-nut, Ar-nut, Kepper-nut, Hawk-nut, Jur-nut, Earth Chestnut, and Ground-nut. Swine are very fond of these tubers, and fatten upon them. They are pleasant tasted when boiled or roasted, being superior in flavour to Chestnuts. They are cooked in soups in Holland, the Alps, and many places in this country, and are said to be very nutritious. We shall be obliged by any of our readers sending us some of these tubers, which we would forward to our correspondent.]

PINE APPLES DECAYED IN THE CENTRE.

[illegible] lately cut about three dozen beautiful-looking Pines, [illegible] attached to several others for the cultivation of [illegible] great disappointment these Pines when cut are [illegible] black in the core. They were grown in pots; soil [illegible] quarters turfy loam, to one-quarter peat, with a little [illegible] The peat is fibry and full of fern roots. The [illegible] with hot-water pipes top and bottom. The bottom heat [illegible] the top heat [illegible] by day, and 65° to 70° by night. Every attention has been devoted to air-giving, watering, and syringing. Water is withheld altogether the moment the fruit begins to change colour. They had a little weak guano water once a-week when the fruit was swelling. I have grown Pines somewhat extensively for several years, but never was so unfortunate with them before. I shall be particularly obliged if you can tell me the reason why they turn black in the centre, and suggest a remedy. Nothing could have looked better than these Pines when swelling and colouring?—Devoniensis.

[We once had a case somewhat similar, and attributed the defect to keeping the plants too moist at the roots, and in too moist an atmosphere to swell the pips to the greatest size. In another case, to give fine flavour, we kept the roots dry and the atmosphere more moist than it should have been, and the centre was a brownish colour and dry.

We by no means would state that either of those treatments was the cause of the decayed centres in the present case, as we have heard of the inquirer as a first-rate Pine grower, but we merely mention our experience and hope that our coadjutors and readers will be able to give a more decided reason for this very great annoyance and disappointment.]

BOUQUET OF FOLIAGE.

At this dull time of the floral year, few are the flowers that can grace our vases; but empty vases are the gloomiest of things, and I think the readers of The Journal of Horticulture will like to have a hint of a way which I have often found very useful, as to how to fill them.

I have a vase before me at this present moment, which looks as light and graceful as I could wish to see, and all its contents are half a dozen leaves!

Everybody knows the magnificent foliaged plants introduced so largely by the Messrs. Veitch. A few days ago I wanted some pretty plants, and these gentlemen very kindly sent me up some "patterns"—that is to say, cut leaves of several Ferns and flowers. The flowers, gay as they were, I left to fade unheeded; for the leaves alone made so exquisite a group as was enough to charm the most genuine lover of beautiful shapes and colours.

There are three kinds of Pteris—one, with a silvery vein; another upright-leaved one harmonising beautifully with the pale green; another of the exquisite Pteris tricolor, with its lilac veins; and then a Caladium veined with crimson and dotted about with white. Two dark, coppery Begonia leaves are added; but whether they are improvements I can hardly say. Faithful to my principles as to Ferns and Heaths, three or four sprays of a small pink Heath peep up amid the Fern, and give a little height. From my own stock I added one frond of Davallia (D. canariensis), I purchased as a small plant some months ago from Messrs. Hooper's stock, and potted directly into cocoa-nut fibre refuse, which makes all Ferns grow so luxuriantly and well; and one frond of Adiantum formosum waves gracefully above all.

This is so simple and so easy a plan for filling empty vases, that I am sure your readers will like to try it. My vase is just 12 inches high, and about 5 inches wide across the spreading lip.—E. A. M.

SHAKSPEARE'S GARDEN.

The following letter to the Rev. G. Granville, Vicar of Stratford-on-Avon, is so interesting to the lovers of Shakspeare, that we have no hesitation whatever, in placing it before our readers:

"24, Essex Street, Strand, Sept. 12, 1861.

"Dear Sir,—I read in the *Athenæum* in the spring of what you were doing for the Home of Shakspeare; of the trees which the Committee had already planted, and of what they hoped for. It was said, 'a fine Fig tree is climbing up the west wall and will give us green Figs in time;' and it was asked, 'who will give to Shakspeare a hardy Vine, one that will bear him the "purple Grapes?"' This house is built upon part of the substructure of Essex House. The two lower stories have the old thick walls. The garden is where the old terrace once was; 20 feet and more above the adjoining Temple Garden. Under it is a long lofty vault, and in it are two old Vines. I do not pretend that they are as old as Elizabeth's time; but I have a fond hope that their ancestors' leaves gave grateful trellis shade, as one of them does now. Their roots are somewhere, no doubt; the old mortar in the vaulting must be very good to give such fruit. Now, my family is so romantic as to believe that Shakspeare must have many a time walked up and down our bit of terrace; have sat at the end with my Lord Essex and Lord Southampton, admiring the moonlight on the river or jesting with 'Night' Templars over the parapet wall; [illegible]

It is even believed that hardly at Stratford is there anything so little altered and so near to Shakspeare's footsteps as our paved garden: hence my writing, that the year before last I reared a Vine by bending down a shoot from the oldest one; that it is well rooted now, and though this season and the last have been unfavourable it is in excellent health; and that, if it so please you and the other members of the Committee, the autumn being come, I would have it taken up and carefully packed, and sent at the proper time for transplanting in its 'New Place.' I am not unused to Vines; I think that very soon it would 'bear the purple Grapes.'—I am your obedient servant, "John J. Cole."

Of course the Vicar and the Birthplace Committee very gladly accept the appropriate present. We hope the plant may thrive.—(*Athenæum.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

The late beautiful weather has, I hope, been embraced for carrying out all matters previously directed. Perseverance must still be continued in the way of hoeing, forking, and surface stirring amongst growing crops, particularly Coleworts, Cabbage, late Savoys, and Kale, as a regular demand for things of this description may be expected throughout the season, and more especially in the spring. *Beans*, a few Mazagans may be planted in soils favourable to vegetation during winter, either where they are to remain, or on a sheltered border, for planting out early in the spring. *Cabbage*, vacancies in the main plantations to be filled up immediately. Employ lime or soot about young Cabbage and Lettuce plants, and repair ravages from slugs. *Carrots*, the whole of the principal crops to be taken up and allowed to dry before they are stored away in sand. *Cauliflowers*, those in frames and under hand-glasses to be divested of their dead leaves, and if any vacancies occur they should be filled up. Give air freely every fine day. *Celery*, if severe frost should set in some long litter should be laid over the most forward crops. *Endive*, when quite dry, tie up a good quantity for blanching. *Onions*, the autumn sowings to be hand-weeded, and the ground slightly hoed between them. *Peas*, in very dry favourable situations the first sowing may now be made. *Shallots* and *Garlic* may now be planted in light, dry soils; but where the ground is heavy it is better to postpone the planting to February. It is advisable to observe particularly if there are any fresh-used mouse holes, if any should be discovered at once get some water and begin pouring it hastily into the hole, which will soon start the inmates, when a flat bushy bough, if used expertly, will soon put an end to all fears about their attacks when the Pea-sowing season arrives.

FLOWER GARDEN.

It is advisable to go over the standard Roses, and to shorten all the very long shoots, that the power of the winds may be considerably lessened when beating on their heads. Chrysanthemums against walls to have their shoots closely tacked to them, and some slight protection to be in readiness in case of an unexpected frost. If any of the biennials are still unplanted let them be planted out now in the places where they are to bloom. Pansies may be divided and planted out for next summer's bloom. The sooner the Tulips are planted the better; when the bulbs begin to elongate the leaf-spike the roots are taking harm. Wherever alterations are in progress lose no time in completing the transplanting of evergreens, the present mild, damp weather being favourable for their removal. Be careful to secure transplanted things against wind, especially large plants, which should never be left until they are properly staked or otherwise made fast; for where this is neglected or postponed it frequently happens that the roots get injured through the tops being rocked about by the winds. As soon as the greater part of the leaves are off the trees let the pleasure-ground be thoroughly cleaned and swept; the leaves, if abundant, to be stacked up for forcing purposes, covering borders, &c.; and in small places to be swept into a hole to rot into leaf mould. The part near the house to be swept daily, to remove leaves and worm casts; and the gravel walks to be frequently rolled, to preserve a smooth surface. As the re-arrangement of the herbaceous ground is considered necessary every two or three years on account of the free-growing plants getting too large, the present is a good time for doing so.

FRUIT GARDEN.

Look over all kinds of stored fruit occasionally, sort out the affected, and wipe others when required with a dry cloth. The out-door Vines to be gone over, and all the lateral shoots that may have been left to the strong shoots to be taken off, and two or three of the joints of all the young wood at once pruned off, which will be the means of greatly facilitating the maturation of the wood. Look over the trees in old orchards, and remove at once those that are considered worthless or worn out. Prepare some good soil for planting other varieties. Prepare ground for new plantations of Currants and Gooseberries. Cuttings of favourite sorts may now be made and planted.

STOVE.

The weather has been most favourable for ripening the succulent shoots of free-growing plants, and, therefore, they may be expected to get well through the winter. The temperature may now decline at night to 60°.

GREENHOUSE AND CONSERVATORY.

On all favourable occasions admit air freely; it will not produce those withering effects that such an exposure would do in spring. The plants having been recently fully exposed to shut them up close now would induce growth, and produce ruin. Pelargoniums will now require some care; watering to be given in the morning, and when there is any appearance of ill health from a foggy moist atmosphere they would be benefited by a little fire applied with abundance of air to drive off the damp; the plants to be placed pretty close to the glass; the principal shoots to be pegged out at regular distances, and the useless ones removed. Cinerarias intended to flower as specimens in spring should now receive their final shift.

PITS AND FRAMES.

Neapolitan Violets to have as much air as possible, and the runners to be removed as they appear. Intermediate, Brompton, and Ten-week Stocks intended for next year to be kept dry, and air to be freely admitted to prevent damp. See that everything is now stored for winter, and give air most abundantly while the weather is fine. Stop Verbenas and other such free-growing plants as they advance, in order to render them bushy, and water them occasionally but very carefully. The lights to be on during wet weather, but tilted up at the back. W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Sowed a row in fine prepared soil of the Parsnip Chervil (Chærophyllum bulbosum) recommended by Messrs. Vilmorin, Andrieux, & Co. Earthed-up Cabbages to keep the stems secure if severe frost should come. Never knew Cabbages and Turnips grow as this season, dry weather and all together. A fine shower on the 22nd, which will help to fill tanks in this neighbourhood that have been next to empty. Laid down in an earthen pit the stems of Cauliflower now beginning to button, to which we will give a little protection when needed. Went over the Cauliflowers showing heads on border, broke a leaf or two and laid over them, which will protect the heads from rain and throw past them a few degrees of frost. Took up all but the last sowings of Carrots, Beetroot, &c., as the latter is best never to see much frost. Gathered the last of the Tomatoes, which have been going a-begging this season; and dug, or rather trenched, part of Carrot ground, in order to put out a good piece of younger Cabbages in case the first should be too forward to stand the frost well, as the want of Cabbages in spring is almost as bad as the want of Parsley, and that was scarce enough in some places last year. Cleared off spent pea haulm, the latter ones being still pretty good; and collected seed of *Scarlet Runners*, which will be good this season and no mistake. If I had not obtained plants from a neighbouring farmer I should have been rather pressed—my own seed, and that from an eminent seedsman, alike refusing to grow more than something like one in six. I do not know what quantity our neighbour sowed in a bed. He said the seed was from two to three years old; but the bed was as thick as the plants could stand, and there was no want of applicants until it was thinned sufficiently. I believe our friend was downright sorry when people gave over coming to his bed, there is such a pleasure in being able to oblige. Sweeped over *Mushroom-beds*, put droppings in sheds for successions, and removed the spawn from the heap as it matured, as there may be month's difference in the bricks being thoroughly spawned through. The spawn should be kept in a dry place, where it will keep good for years. I cannot well say for how many, and, therefore, if a dealer has some good old spawn, there is no use waiting until his fresh made of the season comes in. I have used it with good results four and five years old, and I am not sure but that Mr. Judd, of Althorpe, has used it older still. It is as well, however, not to use it too old, unless extra well kept, for if exposed to damp, or allowed to get too warm, I would not give much for it. When matured the spawn should be permeated with the white streaks smaller than the finest hairs; if as large as small threads of cotton, it may do for present use, but it is too far advanced for keeping. Blanched Endive, by placing a tile or a slate over the tops, and moved some to earth-pits, where protection could be given more easily as wanted.

Dusted charred rubbish among young Cauliflowers, Lettuces, and all young things whatever, that the slugs might be apt to nibble, and sent boys round the walks to pick all they could find of the slimy fraternity in a damp or dewy morning. The black-backed yellow-bellied chaps so difficult to kill, are fond of getting on a hard walk at such times, and also of getting round and upon a handful of brewer's grains.

FRUIT GARDEN.

Much the same as last week. Brushed a few more leaves off the fruit trees, and prepared for fresh planting. Now and for a fortnight or three weeks to come, is the best time for planting all sorts of fruit trees, and also a good time for planting forest trees, as though the leaves be still on the trees they will not be injured now, and the roots begin to run into the warm soil before winter. Evergreens may also now be moved with half the trouble they will require in spring.

GREENHOUSE, &c.

The greenhouse being thoroughly cleaned has been refilled with Camellias, Azaleas, &c., and means taken for filling all the spaces beneath the stages with plants, such as Fuchsias, and old *Scarlet Geraniums*, that require little light and less water in winter. All places under glass will now go through a cleaning process, and to be followed by a cramming process. Properly speaking, in most cases, this would be wrong, as plants under glass in winter, in a growing condition, require more room than in winter, owing to the light being so deficient; but, then, when we cram so much we keep down the temperature to the living-point in opposition to the growing state, and when we let growth take its way as the days lengthen in March, we can turn a good many under protection out of doors. A pit containing some decayed leaf mould was turned over, 15 inches of dryish dung, a little warm, placed beneath it, and the leaf mould on the top, and on this leaf mould the Golden Chain and Alma are being plunged after being up for a week, the most of the leaves being removed, the best plants squeezed into 60-sized pots, and smaller ones, four or five, into a 48-pot. The little heat at the bottom will encourage a few fresh roots before winter. The tops will be kept cool by air. We do not want these to break much before March. Alma, and a few other variegated ones, will be treated the same way. We shall take up some others, and pack them closely in boxes, or in good-sized pots, and try and get them under stages or into sheds where frost and damp will be excluded. Have pricked out a border of Cerastium tomentosum and Variegated Arabis a few inches apart, using little bits so as to form them in rows, with a little sand put in. I have no doubt they will be nice plants by April. The beds in the flower garden are so little disturbed that we can do nothing with them as yet. Scarlet Geraniums are as fine as ever they were. The variegated ones are about over.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

[illegible] also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but [illegible] on separate communications. Also never [illegible] questions [illegible] reply [illegible]

tank-heating. Your mode of dividing the house is good. Glass will be best, at least above the stage in the front. The other part may be what you deem best. Whatever may be your mode of division you should have openings in it to shut and open at pleasure; otherwise we fear if you have merely a tank along the south end, and not also along the west side, you will not have heat enough in the cold or greenhouse part. With openings from the propagating-house in severe weather you may do very well. In such circumstances we prefer the span to the lean-to. Your having glass to the ground on the west side will require more heat in severe weather. The plants close to the south end will be a little drawn that way unless you reverse and turn them round frequently, but the bulk will face the west or afternoon sun.

Fruit Trees for a Vinery (*Berks*).—We do not advise you to put Plums in the house if you use it to force at all; but Figs would do admirably in the warmest end, and Apricots in the coldest. If you could give abundance of air there, you might try Coe's Golden Drop Plum. Both these and the Apricots must have plenty of air. When in bloom and in very bright sunshine a little shade in the middle of the day would be advisable. You may grow in pots and plant out, so as you can get at the roots when the plants grow too freely.

Engravings of Fruits (*A Subscriber*).—There is no modern work like that of B. Langley's "Pomona," published in 1729. The only recent portraits of fruits are coloured, and are in various works, such as the Horticultural Society's "Transactions," the Auctorium appended to Maund's "Botanic Garden," Ronald's "Pyrus Malus Brentfordiensis," Hooker's "Pomona Londinensis," and Brookshaw's "Pomona Britannica."

Work on Pruning (*A Subscriber*).—There is no work devoted to the subject. Our "Fruit Manual for the Many" contains an epitome of the modes of pruning all hardy fruit trees. You may have it direct from our office for five postage stamps.

Names of Fruits (*Flora*).—Your Apple is King of the Pippins.

Disa grandiflora (*Disa*).—You had no just excuse for writing to Mr. Leach on the subject. That gentleman gave the entire stock of it to the Gardeners' Benevolent Society, the money the plants sold for to be added to the Society's funds. We have never heard what the stock sold for, nor who bought it; nor had Mr. Leach heard a short time ago. Perhaps the Secretary has since informed him.

Wintering Geraniums (*G. L.*).—The best way to keep Scarlet Geraniums in winter is to cut them down root and branch, just like Pelargoniums in October, and then give them six weeks' or two months' bottom heat; that is most certainly the best plan. Then it must follow that most of the small fibres are cut out. But when they, the plants, must be dried and go into cellars and similar places, the small fibres would most certainly die of themselves, just like the fibres in Mr. Rivers' orchard-house trees, and it is as certain that it would be best to part with them at once.

Pruning Roses (*Idem*).—The very weak and the very strong wood of all Roses, without exception of kinds, should be pruned in July, not in October or November. After the first flush of summer bloom is over every Rose ought to be "regulated," which means the same as the summer pruning of Currants and Gooseberries. The very weak wood of all Roses ought to be cut out at the end of October; and all the unkindly and weak Roses you see here and there on the top of fiddlestick stems and called standards ought to have their annual winter pruning before October has passed. All moderate Roses to be pruned in February, and all very strong ones not till April. The reasons for the differences will be found amply detailed in former volumes. We are glad to have queries from you, or from any other correspondent, every week, but only two or three questions at a time, so that each question may have due attention.

Taking a Small Farm (*Farming Adventurer*).—It is difficult to give advice in your case in the absence of all knowledge of the locality you propose to settle in; but assuming it to be in the environs of some large town there seems no reason to doubt of your success. At the same time you must prepare yourself for many difficulties and some few disappointments, but with a determined perseverance to succeed there is little doubt but you will ultimately do so. We think, however, that less than six acres will suffice if you purpose to cultivate it by hand labour, which is the best way to make expensive land pay, and in the neighbourhood of a town you will find it very dear. A friend of ours similarly circumstanced as you, started a small nursery or market garden a few miles out of Liverpool, and he had to pay an almost fabulous price for the plot of land he wanted; but he is doing well. All, however, depends on the prosperity of the district. If you have much knowledge of gardening you might erect some glass structure to produce Grapes or other fruits that would pay well, or you might turn your attention that way and erect some for your neighbours, there being an increased demand for such things. At all events, before you embark in an undertaking of which you are not most intimately acquainted, it would be advisable to look well around you, and consult others similarly situated to what you wish to be, making, of course, allowance for any prejudicial opinion that may be given. Having given this general advice, we give a brief answer to your three questions. 1, Six acres of land, if good and within six miles of a town of 100,000 inhabitants, would in all probability cost £500, and more if there were buildings upon it; and indifferent land is dear at any price for hand labour. 2, The neighbourhood of a town would undoubtedly be the best for such an undertaking, as affording the best market for produce. 3, If cultivated by hand, less than six acres ought to occupy both you and all your family. So much, however, depends on the character of the cultivation, market garden crops following each other in quick succession requiring much labour. Fruit orchards less, excepting in the fruit season, and then there is employment for all. But above all, do not settle down in a bleak [illegible] neighbourhood; for although you may succeed even then, you will find it uphill work. In conclusion, we advise you to read carefully the directions given for cropping, &c., in the Two-Acre Farming, and also in the subsequent articles in that way in The Journal of Horticulture.

Flowers in Bouquets, &c. (*A. L. M.*).—The communications on this subject which have appeared with the signature "E.," will shortly be published in the form of a small volume.

Flower-garden Plan (*C. A.*).—The planting is very good indeed. We never offer an objection to any plant or plants, any one may choose, providing the colours come near the truth; and there is not much discrepancy between plants which are matched in pairs, or planted the one with the other.

[illegible] Machine.—"*T. P.*" wishes to know where he can obtain [illegible] machinist [illegible] them would find customers

Asphalte Walks (*Miltoniensis*).—We know that the asphalte walks do not injure trees or plants growing in the adjoining borders, nor do they injure the grass of a lawn which they bound; nor do we think they would injure Box-edging unless the tar was allowed to run among it, which might be easily prevented by a board placed before it, while the asphalte was being laid down.

Proportions of a Greenhouse (*Quid Prodest*).—For such a house 18 feet long, 9 feet wide, the height at back might be 10 feet to 11 feet, and the height in front from 5½ feet to 6 feet. The front sashes may be hanged half of them as you propose, or the ventilation may be in the brickwork, and the glass fixed in front as well as the roof. Three ventilators in the back wall 3¼ feet long, and 1 foot wide near the apex, would do for such a roof, and then all the roof might be fixed. This would, perhaps, be simpler than having three ventilators in the roof at the apex, and all the rest fixed. For such a purpose as you propose, a brick or iron stove will do, with a pan of water on it; a little boiler, however, would enable you to heat both houses. Riddel's, and Lynch White's conical, without brickwork would answer your purpose, or any other small one.

Dissecting Leaves.—Mr. Persac has sent us some specimens of leaves "done in a quarter of an hour." They are of the Oak, and one or two other trees, and very perfect.

Preserving White-hearted Cabbages (*Alpha*).—The best plan we have seen tried, was to take up the plants, or even cut them over level with the ground when the heads were quite dry, and cover them up, stems, heads, all in dry bog earth. We have also tried the same in burned charred rubbish, but not with so good effect. They will keep a good while in a cool, dry shed, with their stems struck in soil; of course, the place in all cases must be lry. What say other correspondents?

Vinegar Plant.—The correspondent who wished for one can b supplied by sending for it to Mrs. Potts, Gilston Road, West Brompton, Middlesex, who most obligingly offers it.

Currant, Gooseberry, and Raspberry Bushes Failing (*S. M.*).—Your soil being "light and dry on a subsoil of chalk," explains why these fruits ail. Your only remedy is the application of clayey loam to improve the taple of the soil; mulching over the surface to keep in the moisture, and watering liberally during dry weather in the spring and summer.

Rockery (*H. M.*).—You will see your inquiry treated of at length in an rticle by Mr. Robson next week, which we expect will meet your case, and we thank you for making the inquiry, as the subject of a rock garden had ot been sufficiently treated of in our Journal.

Growing Mushrooms (*A New Subscriber*).—You will see an article next week on the subject, and some others will follow. You must obtain spawn om some respectable dealer, as it is now too late to make it for use the resent autumn. It is sold by the bushel, and in general is good.

White Tree Carnation The Bride (*S. Caistars, Edinburgh*).—If the lant *retains* its present character it will be a valuable addition to the class Tree Carnations.

Propagation of Strawberry by Flower-stem (*John Southern*).—You o not understand the case. Your specimens are merely runners bearing uit prematurely; the other was an instance alleged of a flower-stalk being duced to strike root, either as a layer or a cutting. Your specimens are nly instances of what occurs every year.

Size of Supply-pipe.—"Whether will a two-inch pipe, or a four-inch pe, from the boiler into three flow and return pipes, of 4 inches diameter ch, heat a conservatory in the quickest and best manner?"—K.L.M.

[The four-inch flow-pipe will convey the hot water most quickly; and, as ere are so many flow-pipes of large diameter, it would be altogether more fective than a supply-pipe only 2 inches in diameter.]

Names of Plants (*A Subscriber*).—Yours is Centaurea montana, not candidissima. If anywhere, you may obtain C. ragusina by applying to me of the chief London nurserymen. Notes upon residences will continue appear in our pages. (*W.*).—A form of Lastræa filix-mas; but from the of a frond we cannot tell if it is any peculiar form, or merely a gorous example of the species.

FLOWER SHOWS FOR 1861.

vember 6th and 7th. **Royal Horticultural Society.** (Fruit and Chrysanthemums.) *Garden Superintendent*, G. Eyles.

vember 12th and 13th. **Stoke Newington Chrysanthemum Society.** Sec., W. T. Howe.

vember 14th and 15th. **Crystal Palace.** (Chrysanthemum Show.) Sec., W. Houghton.

B.—*Secretaries of Societies intending to advertise in our columns will oblige us by sending an early intimation of their exhibition days.*

OULTRY, BEE, and HOUSEHOLD CHRONICLE

CALNE EXHIBITION OF DOMESTIC POULTRY.

The Meeting just closed is the first Poultry Exhibition ever held in Calne, and although all the arrangements indispensle to the successful carrying out of such a Show were, consequently, quite new to the Committee, great credit is due to se gentlemen for the efficient manner in which it was conted. The entries amounted to 170 pens, a number, as will generally admitted, quite equal to the anticipations of those o reflected on the fact, that both the Worcester and Devizes ws are this year held within a few weeks only of the same e as that we now refer to. The pens were placed under a t commodious tent, erected by the kind permission of Mrs. rial on her land closely adjoining the lawn at the front of her residence. We were much gratified to find that not a single instance of ill health presented itself among any of the specimens exhibited, although of late sickness has been somewhat prevalent at the generality of our poultry shows; nor can we omit to mention the wise precaution of the Calne Committee in whitewashing the pens at the onset, together with posting publicly placards requesting the visitors not to handle or feed the poultry. The admission of dogs was strictly prohibited, and a good supply of gas was laid on specially for this occasion. To add to its popularity, the band of the Rifle Volunteers enlivened the proceedings by playing at intervals throughout the day, at a short distance from the poultry-tent. Calne, though small, is a very neat and healthy town, it possesses a fine old church, and in the graveyard surrounding it is to be seen a somewhat expensive tomb, erected in the year 1717, in memory of Inverto Boswell, "King of the Gipsies," who died at the advanced age of 83. The legend runs, that throughout this long life he never once slept beneath a roof, but invariably abided under the tents, at that time so universal among the tribe to which he belonged. Here we have a pretty good evidence that constant exposure produces hardihood, a hint that may possibly prove useful to those of our poultry friends, who as invariably "coddle up" their pets, and thus not unfrequently "kill them with kindness." The gipsy's tomb is a most singular and elaborate structure, somewhat injured by the hand of time, but still one of interest to the passing visitor. But to return to the poultry-tent.

Spanish fowls stood at the head of the prize list. In the class Mr. Rodbard exhibited a pen, doing his yard no inconsiderable credit, and securing to that gentleman a special prize of five guineas; an equally well-deserved slice of good luck falling to an especially good pen of White *Dorkings*, the property of Mrs. H. Fookes, of Blandford. Both these premiums were a liberal addition to the general prize list, being the gift of Mr. and Mrs. T. H. Allen Poynder, of Hartham Park, for the best two pens in either Spanish, Dorkings of any variety, Cochins of any colour, or Game fowls of any breed. These prizes undoubtedly added greatly to insure a keen competition. In the class for any breed of Dorkings except Greys, a mistake in entry by three different exhibitors, placed four pens of undoubtedly the best birds in the tent quite out of competition. We repeat, as we have done again and again, competitors cannot pay too much attention to the correctness of their entry papers, as any mistake here renders disqualification inevitable, nor can Judges or Committee rectify such irregularities after their admission. We fully admit the gravity of annoyance to owners from such a result; but it should be remembered that though such slips between the cup and the lip, when the fowls prove for themselves how easily they could have won, only render still more keen the disappointment. The real ground of complaint is not in the strictly carrying out the regulations, but the wrong entry beforehand. Many pens of the Buff *Cochins* were really excellent, still, strange to say, neither the Blacks, Whites, nor the Partridge-coloured were anything but indifferent. The *Game* classes were both good and closely competing. The *Hamburghs* were good compared to those usually shown in the southern counties. In Black *Polands*, Mr. T. Panton Edwards, of Lyndhurst, exhibited two pens that proved one of the chief attractions in the whole Exhibition: indeed, it is very rarely they have been equalled.

Although in the class devoted to Golden or Silver-laced Sebright *Bantams*, only three pens of the former variety were entered (not a single specimen of the Silver being shown), we cannot recall to mind so close a trial for superiority, all nine of the birds being far better than have been seen for a long time past. By referring to the prize list it will be seen that those noted Bantam breeders, Harvey Dutton Bayley, Esq., Rev. G. S. Cruwys, and Rev. G. F. Hodson, were the proprietors. In the class for any other Bantams, the Game were faultless, and the White-booted ones were excellent.

We do not expect to see much improvement throughout the season in either the *Turkeys* or *Geese*, which took precedence at Calne.

The Rouen *Ducks* were both numerous and good, but the Aylesbury breed were indifferently represented. The Show stood well as to Buenos Ayrean Ducks, with an entry of twelve capital pens. The first-prize pen were peculiarly small and lustrous. The plumage of many of the remaining pens was also faultless.

It is some time since we saw a show that stood so strongly in numbers, or so well in *Brahmas*, as the Calne Meeting, both the light and also the dark-feathered varieties appear to be especial favourities in this locality, and not a few of the chickens were unusually promising.

The "Any other variety" class was well filled, and the specimens far beyond the average of such entries. The Sebastopol Geese, a most beautiful and unique variety of ornamental water fowls, were shown in first-rate condition by Harvey Dutton Bayley, Esq. Their novelty brought many visitors. A protective price of £25 the pair prohibited sale, however. It seems somewhat singular, that though introduced some years back, and thus beautiful, they still appear to be nearly as limited in point of numbers as at the onset.

Although Calne now labours under the real disadvantage to a poultry show, of being six miles from a railway station, the birds were promptly returned; and we hear with pleasure a line is now actually in construction to the town. In future years, therefore, there is but little doubt that the Calne Show will rise considerably in importance, more particularly should the meeting take place at an earlier period of the year.

Spanish.—First, J. R. Rodbard, Aldwick Court, Wrington. Second, J. O. Brinkworth, Calne. Highly Commended, A. Heath, Calne.

Dorkings (Grey).—First, Lady J. Cornwallis, Linton Park, Staplehurst. Second, R. Henly, jun., Calne. Commended, R. Henly, jun., Calne.

Dorkings (any variety except Grey).—First, Mrs. H. Fookes, Whitechurch, Blandford (White). Second, withheld.

Cochin-China (Cinnamon and Buff).—First, Mrs. H. Fookes, Whitechurch, Blandford (Buff). Second, A. Heath, Calne (Buff).

Cochin-China (any variety except Cinnamon and Buff).—First, withheld. Second, R. Everett, Gibraltar Cottage, Monmouth (White).

Game (Black-breasted and other Reds).—First, J. R. Rodbard, Aldwick Court, Wrington (Black-breasted Red). Second, R. H. Keable, Preshute, Marlborough (Black-breasted Red). Highly Commended, V. Sandford, Chatsworth Lodge, Mannamead, Plymouth (Black-breasted Red). Commended, V. Sandford (Black-breasted Red).

Game (any variety except Reds).—First, A. M. Sloper, Seend, Wilts (Duckwings). Second, Rev. G. S. Cruwys, Cruwys Morchard Court, Tiverton. Third, F. Baily, Calne (White).

Hamburghs (Gold or Silver-spangled).—First, Lady J. Cornwallis, Linton Park, Staplehurst (Silver). Second, F. Baily, Calne (Golden). Highly Commended, J. Gilbert, High Street, Devizes.

Hamburghs (Gold or Silver-pencilled).—First, Miss L. Keable, Maddell Farm, Lambourne (Silver). Second, E. C. Phillips, Chippenham (Golden). Commended, B. Rumboll, Calne (Silver).

Polands (any variety).—First and Third, T. P. Edwards, Lyndhurst, Hants (White-crested Black). Second, J. Hinton, Hinton, near Bath (Silver).

Bantams (Gold or Silver-laced).—First, T. H. D. Bayly, Ickwell House, Biggleswade. Second, Rev. G. S. Cruwys, Cruwys Morchard Court, Tiverton. Highly Commended, G. F. Hodson, North Petherton Bridgwater (Sebright).

Bantams (any variety except Laced).—First, T. H. D. Bayley, Ickwell House, Biggleswade (Black-red Game). Second, V. Sandford, Chatsworth Lodge, Mannamead, Plymouth (Duckwings). Highly Commended, Rev. G. S. Cruwys, Cruwys Morchard Court, Tiverton (White); V. Sandford, (White). Commended, J. Gould Chippenham, (White).

Any Variety of Fowl not Mentioned in the Above Classes.—First, J. H. Craigie, Woodlands, Chigwell, Essex (Brahma Pootra). Second, J. J. Fox, Devizes (Greys). Third, A. Heath, Calne (Light Brahmas). Highly Commended, A. Heath, Calne (Light Brahmas). Commended, J. Hinton, Hinton, near Bath (Brahma Pootra).

Turkeys.—First, Miss L. Crawshay, Caversham Park, Reading (Cambridge). Second, Miss J. Milward, Newton St. Loe, Bath (Black). Highly Commended, Mrs. G. H. W. Heneage, Compton Bassett (Norfolk); Rev. H. G. Baily, Swindon (Cambridgeshire).

Geese.—First, Mrs. H. Fookes, Whitechurch, Bradford (Grey). Second, T. H. D. Bayly, Ickwell House, Biggleswade (Sebastopol). Highly Commended, Miss L. Crawshay, Caversham Park, Reading (White Dutch); H. Brown, Blackland Park (Chinese).

Ducks (Rouen).—First and Second, Rev. H. G. Baily, Swindon. Highly Commended, Miss L. Crawshay, Caversham Park, Reading; R. Keevil, Lacock, Wilts. Commended, J. P. Coleman, Beversbrook House, Calne.

Ducks (Aylesbury).—First, G. Hanks, Quobwell Farm, Malmesbury. Second, G. Bryant, jun., Littlecott Mill Pewsey.

Ducks (Black East Indian).—First, F. W. Earle, Edenhurst, Prescot. Second, G. S. Sainsbury, Rowde, Devizes. Highly Commended, G. S. Sainsbury. Commended, G. S. Sainsbury.

Ducks (Any other Variety).—First, T. H. D. Bayley, Biggleswade. Second, E. C. Phillips, Chippenham (Call Ducks).

Spanish Chickens.—First, J. R. Rodbard, Aldwick Court, Wrington Second, J. O. Brinkworth, Calne. Commended, F. Crook, 12, Harringdon Street, London, N.W.

Dorking Chickens.—C. Smith, Durnford, Salisbury. Second, Lady J. Cornwallis, Linton Park, Staplehurst.

Cochin-China Chickens.—First and Second, Major F. C. Hassard, Hilsea, Portsmouth. Commended, Mrs. H. Fookes, Whitechurch, Blandford.

Game Chickens.—First, W. Long, Devizes. Second, R. Elling, Sutton Parva, Warminster (Black-breasted Reds). Highly Commended, J. Keable, Thatcham, Newbury (Black-breasted Reds); R. Elling (Black-breasted Reds). Commended, W. Bleaden, Calne; F. Baily, Calne (Black-breasted Reds.)

Chickens (Any distinct breed).—First, T. P. Edwards, Lyndhurst, Hants. White-Crested Black Polands). Second, Lady J. Cornwallis, Linton Park, Staplehurst (Silver-spangled Hamburghs). Highly Commended, J. H. Craigie, Woodlands, Chigwell, Essex (Brahma Pootra); T. P. Edwards (White-crested Polands); J. Hinton, Hinton, near Bath (Brahma Pootra, J. P. Coleman, Beversbrook House, Calne (Japanese); F. Baily, Calne (Golden-spangled Hamburghs.) Commended, J. H. Craigie.

Sweepstakes for [illegible] Cocks (Any Variety).—Prize, J. R. Rodbard [illegible] Spanish [illegible] breasted Red Game.) Prize, A. Heath, Calne (Light Brahmas.) Highly Commend d, J. R. Rodbard (Duckwing Game Bantam.) Commended, A. Heath (Spanish.)

The Judges were Charles Ballance, Esq., of Taunton, Somerset, and Edward Hewitt, Esq., of Sparkbrook, Birmingham.

COLOUR OF POWTER'S EYES.

Will you say in your next paper if a first-class Powter would be disqualified if the eyes do not match, one being a pearl eye and the other quite dark? Please say if that would disqualify the pen, or would an inferior bird with even eyes stand a better chance of a prize than the one named?—Cheshire.

[Any Powter, except white, should have gravel, orange, or pearl-coloured eyes. Imperfect eyes are a fault, but not of that magnitude as to be considered a disqualification, yet sufficient to turn the scale where the competitors are otherwise very nearly balanced.—B. P. Brent.]

HYBRID BETWEEN THE GROUSE AND BLACK COCK.

We have often denied the existence of crosses and, consequently, hybrids in a state of nature. We were last week compelled to own we were mistaken. We saw in Mr. Baily's shop, in Mount Street, a plain cross between the Grouse and Black Cock. We say plain because it possesses, undoubtedly, such evidence as cannot be questioned, that it is the produce of a cross.

It is, we believe, being stuffed. We will give a full account of it before long.

REMINISCENCES OF A GAMEKEEPER.

(*Continued from page* 490.)

A week sufficed to show me I was fallen into a very land of milk and honey. My cottage was furnished not only well, but almost elegantly, and it possessed everything that could be required for comfort, ease, and utility. What a difference between the agent and manager! Instead of a written order to justify the disbursement of sixpence, I was told if I wanted anything I could have it. I was haunted by only one care; it was too good to last, and I was always on the *qui vive* to prevent or avoid anything that could jeopardise my place.

I found whenever there was the probability of a hard day, the head keeper had the gout, and his duty devolved on me; but everything was so perfect, and so liberally provided for, that even work became a luxury. Such guns; such dogs; such an unlimited number of markers, watchers, or beaters, that I often seemed to myself rather an officer in command than a servant under orders.

The manor was a beautiful one, rather hilly, but abounding in open, level spots, and offering almost any description of sport. My master was more than popular, he was beloved by every man on his estate, and for that reason the keeper's place was an easy one; every man was a keeper. I may here be pardoned if I indulge in a trifling digression. I would sooner take two-thirds of the salary of a popular man, than twice as much of one who was disliked. It was a treat to live on this estate. Capital cottages, large gardens, constant employment, and uniformly kind treatment, made a contented labouring population. Except for a fortnight before and after Christmas, and for a week or two about laying time, no real watching was necessary, and I still found, like all the other servants, I was thriving, and my clothes were getting small. But we all saw with fear, that the life that suited us so well, was killing our master. He not only got stout but he was drowsy, and although the medical men ordered more exercise, he took less. He now rode when shooting. When I was first with him, he generally started about ten, luncheon met him at the appointed spot at two, and there was little shooting afterwards. But they *were* luncheons; not a little hand-basket of notions and remnants, but two donkeys, one laden with panniers, the other with a keg and bottles.

The house was always full of company in the shooting season, and two or three parties, of two each, in September, had their beats and keepers appointed to them, with instructions to meet at luncheon-time. No offence was so serious in my master's eyes as to be unpunctual. The steward's-room boy and a stable [illegible] and with our help it was soon spread out. Those panniors were rich ones; every description of pie, cold fowls, small hams, large tongues, sandwiches, fruit, &c., all packed in metal cases that fitted in a box which formed the table. Silver forks, spoons, and goblets, and in winter I have known hot soups and made dishes sent out into the coverts. All sorts of wine and mineral waters loaded the other donkey, while the keg was filled with beer for us. Luncheon always lasted an hour, often more. Nothing eatable was returned to the house, but all was given to the keepers and others. It was the head keeper's place to name the spot, and he generally pitched on a summer-house or good shed, except in very hot weather, when he would select some shady, sheltered spot, where timber sticks were lying.

In the early part of my stay there, luncheon was generally over, and the cigars finished by four, and one hour's shooting brought us to the Hall. Master was too fond of eating and drinking, but there was nothing selfish about him; he wished every one to be like him, and has told me hundreds of times jokingly, that if I did not get fatter he would discharge me. *Now*, master rode his pony, many days he scarcely shot at all, and on others he would ride straight to the luncheon spot, where we should find him asleep on our arrival. He was listless and careless about everything except his eating and drinking, and it was only after luncheon he rallied and became somewhat like what he used to be. He would eat, drink, and smoke till he fell asleep, and would forbid us to awaken him until the carriage he had ordered came for him.

PARTHENOGENESIS IN THE HONEY BEE.

I enclose a full report by the operating surgeon of the post mortem examinations of a perfectly fertile queen, a couple of drones, and a drone-breeding queen, which took place at the Devon and Exeter Hospital, and which will be found much more full and complete than the account already given by "A Devonshire Bee-keeper."

"Examination of the Spermatheca of a Perfectly Fertile Queen (September 28).—The sac was about the size of a mustard seed—spherical, opaque, milk white. A canal passed from it into the oviduct. On rupturing it on a glass slide, a milky fluid flowed out, which immediately covered with a piece of thin glass, and examined under the microscope with a power magnifying 220 times, showed countless numbers of minute, attenuated filaments, rapidly moving in ceaseless gyrations, but forming such a dense mass that it was impossible to trace any one thread separately. Pressure was applied, and some of the fluid squeezed out from between the glasses, leaving behind a very thin stratum. Each filament could now be separately traced, and appeared as a transparent structureless line, without any dilatation throughout its length, indeed both ends became so greatly attenuated that they were scarcely visible. These points were made out more clearly by applying higher powers, magnifying about 400 and 700 times. The movements adopted by the spermatozoa were chiefly in circles and figures of 8, but this doubtless was partly due to the pressure used and the narrow limits allowed them, as in subsequent examinations some assumed a more longitudinal direction. A diagram of a spermatozoon of an insect, and pretty accurately corresponding with those just described, is given in Griffith and Henfrey's "Micrographic Dictionary." The ovaries were examined but appeared to be quite empty (it was the end of the season), no ova nor germ masses in any stage of development could be made out, a little diffused granular matter seemed the only contents.

"Examination of the Drones (October 7).—The testicles, seminal receptacles, and auxiliary organs of a drone having been carefully isolated, and their connection with the muscular ejaculatory sac by means of the excretory duct, traced—the yellowish, somewhat fusiform seminal receptacles were successively opened, and the contents of each examined with 1-5 and 1-8 inch lenses. The fluid, besides granular matter and (apparently) nuclei, contained abundance of linear, rapidly moving bodies, exactly corresponding with those found in the spermatheca of the queen previously examined.

"The opaque, glistening, pearly white, cylindrical cæca,—larger than the seminal receptacles, and into which each of these latter opened respectively, were found to contain a granular, very viscid fluid in which, after a very careful search, no spermatozoon whatever could be discovered. The posterior extremities of the two cæca almost or quite coalesced, and from the point of union the common excretory duct took its origin.

"Examination of Drone-breeding Queen (October 13).—The spermatheca when isolated was rather smaller than that of the perfectly fertile queen, and, unlike it, was colourless and hyaline. The wall of the sac, though transparent in most of its extent, had several semi-opaque spots on it, which subsequent examination proved to be adhering connective tissue, tracheæ, &c. On pricking it with a fine needle, a clear, extremely limpid fluid exuded, which, examined as before, was found to contain neither filaments, cells, nor nuclei, a very few scattered granules were alone visible in it. Further careful examination of the remaining contents of the sac equally failed in detecting a single spermatozoon.

"The microscopes used in these investigations were those of Messrs. Powell and Leland, and Smith and Beck.—J. U. Huxley, *October* 20, 1861."

AN OBSERVER PUZZLED.

Whilst beguiling a leisure hour by perusing the apiarian articles contained in the last two Volumes of The Journal of Horticulture and Cottage Gardener, I was rather surprised to find that your able contributor, "A Renfrewshire Bee-keeper," avows himself in No. 661, old series, as being the same correspondent who writes also under the signature of "A Young Bee-keeper." Remarking at the same time, that under the first appellation he boasts "a still longer experience" than ten years; whilst in the latter character he modestly hints at his "limited experience." I should be glad to be informed, if his really excellent contributions are to be ascribed to the wonderful precocity of a comparative novice in bee-keeping, or are to be valued as the results of a lengthened experience.—Observer.

FECUNDATION OF THE QUEEN BEE—RAPID MULTIPLICATION OF LIGURIAN STOCKS.

I regret that I am unable to furnish "Investigator" with precise information respecting the age of the young queen with undeveloped wings, at the time she was removed. My impression is that she was three weeks old, and the distended state of her abdomen satisfied me that she was about to commence egg-laying. The malformation of her wings being evidently congenital, I was rather surprised that it had not earlier attracted my attention; but, happening to have queen cells in a state of forwardness at the time, and the season being so far advanced, I destroyed her at once, and substituted a couple of royal cells as the only chance of furnishing the stock with a fertile Ligurian sovereign. I should add that there were no drones in the hive.

I find that I mistook "Investigator's" query regarding a second "fecundation," owing to his using the word in a different sense to that in which I am accustomed to apply it. I have for some time suspected that more than one copulation may occasionally take place, although I have not been so fortunate as he appears to have been in verifying my suspicions. If I were inclined to theorise on the point, I should conjecture that the sexual impulse on the part of a queen bee is not altogether allayed until her spermatheca is completely filled with male semen, and that as the size of that organ varies in different individuals, some may require the services of more than one drone to effect that object, and such would very probably turn out to be possessed of an extraordinary degree of fertility. When either an impregnated or virgin queen commences egg-laying, I believe all sexual desire on the part of the female is extinguished for ever.

The ten colonies raised from one stock were formed in this manner—during the months of April and May eight small artificial swarms were taken out on the following days:—17th, 24th, 26th, and 29th of April, and 9th, 16th, 23rd, and 25th of May. At this time honey was collected in such enormous quantities that the queen could not find an empty cell, in which to lay an egg. Seeing, therefore, that breeding was nearly put a stop to, I was compelled to give room, which I did, by putting on a super 13 inches square by 7 inches deep: this was filled, and when taken off contained 38 lbs. of excellent honey.* The bees were afterwards employed in finishing a super taken from another hive; but the honey season being over, they did not make much progress, and on the 9th of August a very large artificial swarm, being the ninth and last for this season, was formed.

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* This super may be seen at Messrs. Neighbour & Sons, 149, Regent Street.

Of the first eight swarms several have been dispatched to different parts of the kingdom. During this present writing I have had a visit from a friend residing near Honiton, who possesses one of them. He tells me that he has placed it in a hive, 18 inches by 14½ inches, and 9 inches deep inside, with twelve frames, which it has completely filled; and he declares his firm belief that it is more populous than any stock of common bees in the kingdom. The others, after divers revolutions, which have resulted in their sovereigns founding new dynasties in distant regions, or perishing in the attempt, have been recruited by the addition of common bees and a copious supply of food, and now appear sufficiently strong to stand the winter.—A DEVONSHIRE BEE-KEEPER.

YOUNG BEES EXPELLED FROM HIVES.

To assist "A PERPLEXED YOUNG BEE-KEEPER" in elucidating his difficulty as to his "Young Bees Expelled from Hives," I may mention that such a proceeding is by no means rare—indeed, we have had considerable experience of it in our locality, and can confidently attribute it solely to an erroneous estimate of the ways and means.

It generally takes place, should congenial weather set in, towards the end of the season, with a large quantity of brood verging towards completion; and where it is carried to an alarming extent, we have invariably found it in hives possessing young queens, although it sometimes occurs with a very late swarm.

We have often compared expelled young bees with those emerging upon driving a hive, and found wings and every other portion as fully developed in the one case as in the other, but only weaker.

Should a hive in this condition be transported to a later locality or the moors, and honey gathering set in, I will warrant it will be completely checked. Or even if feeding be continuously persevered in it will have a similar effect, in exemplification of which take the following case.

A friend had a Stewarton-hive a few years ago which changed its queen in the month of July. After the old one had been put out, he saw the youthful successor to the throne take two or three aërial excursions. As nearly as he can recollect it weighed 50 lbs. in three boxes. The hive began to expel bees to an alarming extent. About the middle of August he converted 4 lbs. of sugar into syrup, gave half one evening, the other the following. This partially checked the evil; but in two or three days it was renewed as determinedly as ever. Fed as before two days, after which gave 1 lb. daily for the succeeding five or six days. This had the desired effect, and he had the pleasure of witnessing plenty of young bees taking wing afterwards. The hive did well the following season.—AN AYRSHIRE BEE-KEEPER.

UNITING BEES.

ALTHOUGH unwilling to differ from so good an apiarian as "A RENFREWSHIRE BEE-KEEPER," I am of opinion that the reply which was given to "A. W.'s" inquiry was perfectly correct. I have invariably found that a queenless hive placed upon another possessing a queen is (after fighting is over), treated as a super, and that the lower one becomes the stock-hive.—A DEVONSHIRE BEE-KEEPER.

"B. & W.'s" APIARY IN 1861.

(*Continued from page* 509.)

IT was on the 18th of July that I made the transfer of stock boxes D and A, depriving the latter of its queen, and compelling the bees to rear an Italian hybrid out of the brood of D. My first intention had been to make of this stock a sort of nucleus for the rearing of a sufficient number of young queens to supply my other stocks. As it appeared, however, that they had but one properly-matured royal cell on the 25th, I did not venture to disturb them again. Nothing remained but to repeat the operation of the 18th, which accordingly I did on the 2nd of August. Driving the Italian queen a second time out of her box, a quantity of brood ceiled and unceiled, and eggs too were found in it; all the latter (unceiled brood and eggs), I assumed to be pure Italian brood, as a fortnight had elapsed since the first transfer. A piece of this brood in the comb was given [illegible] the hope that the bees there would [illegible] better than [illegible] [illegible] refused to rear a queen, merely contenting themselves with laying the foundations of a royal cell, in a bit of empty comb abutting on the piece of Italian brood-comb which they wholly neglected. At first I thought they might have done this for convenience, intending to transpose one of the eggs; but, although evidently aware of their being queenless, they persisted in ignoring their duties, and the royal cell remained unoccupied.

To return to the Italian stock. Having taken out this piece of comb and given it to E, I put the box with its remaining contents of Italian brood in the place of C, the strong artificial swarm of May 24. C itself, queen and all, was shifted to a new stand in my garden, excepting a super full of bees, which was placed over the Italian box in the bee-house. In a few days the great majority of the bees of C found their way back to their old locality, and everything went on so favourably that on the 5th six royal cells were found tenanted, one of which with a whole comb of brood I put into a small box and gave to E, resolved to give them one more chance. On the 13th, I took out another comb containing four royal cells ceiled over (leaving two behind), and gave them to F. This stock I intended to treat in the same way as A and C; but on driving the bees out I found a quantity of artificially-formed royal cells in every stage of progress. No doubt the old queen had lately come to the close of her natural life, and the bees were repairing their loss. Every one of these royal cells I carefully cut out, and substituted a bar of Italian brood with the royal cells taken from G. Thus it will be seen C became a nucleus, which supplied E and F, as well as itself, with Anglo-Italian hybrids. Each of these three stocks has since done remarkably well. C and E especially have very fertile queens, which have been breeding rapidly the last three weeks, during which time I have been feeding largely with the bottle throughout my apiary. F has only just begun to carry pollen, but I doubt not they have a fertile queen. The queen of E I set eyes on on the 20th of August. She being herself a pure-bred Italian, was beautifully marked: her offspring, of course, will be hybrids. This stock was so very weak in bees at the beginning of September, that I hardly expected to save it. However, by adding bees and brood taken out of other hives, the population so far increased as to suffice for the wants of the young hybrid brood, and it is now rapidly increasing in strength. In fact, I look upon it as the most promising stock in my apiary, judging from the extraordinary quantity of pollen (extraordinary for the season and the circumstances of the hive), which is daily being carried in. C, however, is by no means inferior in promise.

Thus it will be seen four of my English stocks had become successfully Anglo-Italianised. B only remained to be operated upon. This was supplied on the 16th of August with Italian brood direct from the parent stock D; by repeating the process of transposing the boxes, D and B (as in the case of D and A and D and C) after killing the young English queen of B. Both B and D were full of brood, so that neither hive suffered by the transposition in regard to population. Everything went well here, as in the case of the other hives. The young queen was hatched in due time, and has just commenced laying, pollen being carried into the hive in large quantities. The pure Italian stock has gone to rest for the present, while all my five Anglo-Italian hybrids are in full vigour of breeding. This is to be accounted for by my having taken to feed them liberally to make up for the great consumption of honey which has followed upon these various operations.

It only remains for me to re-arrange the order of my apiary as it now stands finally disposed for the winter. In the bee-house my six stocks are as follows:—

A.	B.	C.
(Anglo-Italian hybrid queen, artificial. July, 1861.)	(Anglo-Italian hybrid queen, artificial. Aug., 1861.)	(Anglo-Italian hybrid queen, artificial. Aug., 1861.)
D.	**E.**	**F.**
(Pure Italian queen, artificial. June, 1861.)	(Anglo-Italian hybrid queen, artificial. Aug., 1861.)	(Anglo-Italian hybrid queen, artificial. Aug., 1861.)

With these six stocks I propose to work my apiary, if all is well, in 1862. G and H having English queens, are to be removed to a bee-house belonging to a clerical neighbour four miles off.

Before I close, I wish to speak a word in favour of the bottle-feeder recommended by "A DEVONSHIRE BEE-KEEPER." I [illegible] of Messrs. Neighbour & Sons' feeders in operation, [illegible] common wine-bottle will do equally well. This is [illegible] mode of administering food to bees which has come under my observation, nor I believe can it be excelled. It is the *ne plus ultra* of bee-feeders.

I may further state that my honey harvest has reached the amount of 207 lbs. weight of honey and honeycomb, of which I have sold upwards of 1 cwt. for £7 0*s*. 2*d*. Some of it fetching as high a price as 1*s*. 6*d*. per lb. This is decidedly the best honey harvest I have ever had from only seven hives partially plundered. —B. & W.

A PLEA FOR A FEW MORE SMALL FARMS.

In your No. 643, Mr. Appleby gives some hints to gardeners, and as there appears to be a greater supply than there is a demand, Mr. Appleby offers several suggestions as remedies. Firstly, not to train so many young men to the profession; secondly, emigration; and thirdly, to turn their attention to farming.

On the two first remedies I shall have but little to say; but if there are fewer young men trained to gardening, there will be less need of emigration, except from choice. But for a man to turn farmer is much easier said than done; and to become a first-class farm labourer (which he could not) would not better his condition at all; and if he was competent to become a farm bailiff, or manager, he would find but very little elbow room there, as there are scores of farmers' sons, either from want of capital to stock a farm, or from the want of a farm to employ their capital upon, that would be glad to take situations of that description for very little pay, merely to get a start from home and in the world, and would be taken in preference to a man having a knowledge of gardening only. And to become a farmer to live and thrive by farming requires, besides a knowledge of cultivating land, a knowledge of buying, rearing, and managing stock on first principles, though on a small scale.

This is the additional knowledge that is required by young gardeners to make them the most useful, the most sought after, and the best paid men in the country, and what is more difficult to obtain than either the knowledge or the means to farm with, is the farm.

There are hundreds of careful, industrious, practical men at the present day, whose family has increased beyond the limits of a gardener's cottage, that would be glad to rent from five to twenty acres of land, would give more rent for it than the large farmer, produce double the crop, be a valuable member of society, keep down poor rates, and bring up his family to a knowledge of industry and independence. Although the above is very desirable, at present it is not come-at-able to the extent required; still there is another door open for the young gardener who cannot see a prospect of realising the hoped-for position as a gardener.

It is pretty well known that the merchant and manufacturing gentry of the higher class take every opportunity of enjoying a country residence; and whether they buy a property or rent one, a good deal of alteration generally takes place; labour is employed, and money is circulated, and the neighbourhood is generally much improved, and the gentleman is in hopes of enjoying the bounties of nature raised upon his own land. The vegetables fresh from the earth the morning they are dressed; Strawberries on the breakfast table with the morning dew upon them; the cream genuine, thick as custard, just brought from his dairy; eggs warm from the nest of his own fowls; and then what butter! and the guest declares he never ate such butter before; and the lady of the house very seriously informs him that they consume double the quantity of butter since they have had a dairy, and she must have another cow to supply the house with butter all the year round, as she must have the cream, and cannot eat bought butter. This is not imagination, but what really took place. And what beautiful fowls too, plump and tender. A certain city friend on each visit always stipulates for fowls and bacon for dinner. And don't the gentlemen at the dinner party find a subject for conversation in that quarter of lamb! "My own rearing, gentlemen, and fatted on my own premises. My first attempt; hope to do better next year." But every one exclaims, "splendid!" and in drawing the carving-knife through the kidney he experiences a pleasure much better felt than described. But this is only a part of the enjoyments. Who can enjoy that cream and butter without having a desire to know something of its manufacture? and every fresh visitor must see the cows milked, and the butter churned, washed, and made into breakfast pats. Then there is the poultry. Of course they must see the poultry fed, and away goes Peter with the food to the fowls. Barton, the lady and gentleman of the house, and the visitors following closely to see the force of habit, which the master of the house has just been discoursing about. The food is strewed about a nice gravelled yard, with pens for various purposes round the north and west walls. But where are the fowls? A glance from master to man tells at once who enjoys the fun. Then Peter gives a whistle, both loud and shrill, and down comes a flock of Pigeons; then rushing helter-skelter over the wall and through the doorway whole troops of fowls of all sizes; and last of all come waddling through the grass, heads erect, forty-three Aylesbury Ducks. I have seen them when returning home at night, all in one line—a sight worth seeing.

"I should think it must take a long time to learn them your whistle, Peter?" "Well, no sir, not very long, though perhaps I may whistle a very long time for any other purpose before they would understand me." "But what is become of the chickens?" Then the master points out the above-mentioned pens, and explains his success in rearing poultry. These pens are chiefly made of laths partitioned off into four compartments. No. 1 has a very small entrance for the youngest; No. 2 a little larger, and so on to the fourth. There is food and water kept in each pen, so that the chickens can go to it whenever they like. There are holes in the partition, so that if No. 1 should by mistake run into No. 4, they pop into No. 3, and so on till they get into the right one; but they rarely make a mistake.

I must leave the sheep and lambs till a future day, and come more to the point. The gentleman and his family are enjoying the fruits and pleasures of rural life; and there is not a village in the country but contains one or more such property, to say nothing of the number in the vicinity of towns, and yet they are only enjoyed in part. There is the garden with its fruits and its flowers, but where is the land? Why, the nearest farmer rents it, and if the gentleman is asked why he does not keep it in his own hands, he tells you he cannot get a man that understands the management of these things and the garden. Another will say, "Well, I have tried it, and there is always something going wrong, and in the end I am considerably out of pocket by it."

Now, here is a field open for the surplus gardeners. Gentlemen would be only too glad to meet with such men as Peter, and give them better wages than nine out of ten would ever get as gardeners only. They have only to wish it and it is done; but the "how and the why" shall be given in other papers if not objected to.—The Doctor's Boy.

THE KERRY BREED OF COWS.

Crossing the channel, we find that although the cattle met in different parts of Ireland present a great diversity of type, the unimproved cattle of one district differing materially from those in another, there is one distinct native breed, possessing certain characteristics, which renders the neglect with which it has been for the most part treated the more disgraceful. In fact, it would almost appear as if breeders of Kerries had entered into a combination to destroy it; but despite of all the neglect the breed has experienced, still pure-bred specimens are to be found of such uniform character that it is evident it only requires some one possessing sufficient skill and judgment to set about breeding Kerries in a proper manner to render it one of the most valuable "fancy" breeds of cattle in the kingdom. As it is, they are eagerly sought after; but there are plenty of cattle sold as Kerries which are not pure bred; they may have been bred in Kerry, but they are not Kerries.

True-bred Kerries yield rich milk, and that, too, in much larger quantities than one would imagine from their diminutive size. When put on good keep they fatten readily, and their beef is fine in the grain, and of an excellent flavour. In the latter point the Kerries and Zetland cattle are superior to all other breeds, closely resembling each other in the quality of their flesh.

The pure Kerry is small, light, and active; the head is small and fine, with a clear, bright eye; neck fine; horns short, and turned upwards. Sometimes the horns are not "cocked" alike, there being a kind of twist in the "cock," and some look upon this as one sure mark of a true Kerry. In general, they are light in the hind quarters, but high-boned, and wide over the hips. The colour is varied, being either black, red, or brindled, or piebald in any of these colours. When kept on their native mountains their hair is long and rather coarse, but it becomes short and fine when they are brought to better keep. If means were taken to improve the breed it would be advisable to secure, if possible, a distinguishing colour; and, probably, a piebald black and white would be the best, particularly as such marking would be more liked in a fancy animal than, for instance, a pure black. This, however, is a matter of taste, but uniformity would certainly be highly desirable.

We have said that the breed is small; and as an example we may remind our readers that a beautifully finished Kerry cow was exhibited at the winter fat stock show of the Royal Dublin Society in 1860, which was only 38 inches in height at the shoulder; 70 inches in girth; and 42 inches in length from the top of the shoulder to the tail head; indicating a weight of about thirty imperial stones.

Some have proposed improving the Kerry by crossing with some kindred breed—the Skye Highlander, for instance; but we would most strongly condemn such a proceeding. We believe that the improvement of the Kerry, and the establishment of a uniform character, both in shapes and colour, must be effected by judicious and skilful selection, and by that alone. There is ample material for doing so, and we feel assured that any sensible man, competent for the undertaking, who will go quietly and judiciously to work in this matter, selecting the best and purest-bred sires and dams to begin with, of a uniform colour, &c., if possible, and carefully culling any of the produce which does not come up to the mark, will be amply repaid for all his trouble. This should be done, however, in a high-lying district; for the cultivation of the breed in this manner, where the pasture is rich and the climate genial, might lead to its complete alteration, at least in several of its characteristics.

When put to shorthorn bulls, Kerry cows produce good crosses, much larger than their dams, which fatten readily, and produce good beef; but in the meantime we would much rather see the improvement of the pure breed earnestly and judiciously carried into effect. The Bretonne cattle resemble the Kerry very much in their size and general appearance, as well as their milking qualities, and it is evident that the two breeds are closely allied. Indeed, from the proximity of Brittany to Kerry, it is not at all unlikely but that there have been, at some remote period, a transmission of cattle from the one place to the other.

We have alluded to the diversity of appearance which is to be seen in the cattle found in several parts of Ireland. This has arisen, in a great measure, from the numerous breeds which have been introduced, especially bulls, from time to time, and the careless and irregular manner in which these have been used by the common class of farmers. The imported bulls might be used for a season or two, and the produce would then be put, perhaps, to a cross-bred bull, or a bull of no particular breed, simply because such a bull could be got for a shilling, or because the cross-bred bull was most convenient. From this cause, among others, there is, in many parts of the country, a race of mongrels, which it is impossible to assign to any particular breed, whilst in others we may readily detect traces of some distinct breed. Thus, we find in the north that polled animals are by no means scarce, showing that the use of Galloway bulls, which was much in fashion in that part of Ireland at one period, has left its marks, although the polled specimens we now meet with are of all colours except that which characterises the Galloway. In other cases we find evident signs of a crossing, more or less remote with the Ayrshire, the Hereford, the Devon, the Dutch, &c., so that in some country fairs we have seen descendants of half a dozen of different breeds, and not a pure-bred animal of any breed on the ground. Matters, however, are improving in this respect, at least where landlords have the good sense to keep up a constant succession of pure shorthorn bulls for the use of their tenantry; and we could name districts where the most marked improvement in the description of cattle found in the hands of the ordinary run of farmers has taken place, solely in consequence of the landed proprietors in those districts having adopted this most judicious course. We must protest, however, against the use of cross-bred bulls, a practice which is, unfortunately, too common; and we are sorry to see that it is even encouraged by some farming societies giving prizes to such animals.—*Irish Farmers' Gazette.*

[illegible]NSEC[illegible] [illegible]MPIR[illegible]

[illegible] ce like mine, within a [illegible] en [illegible] severe erythematous inflammation, apparently [illegible] plants or insects.

[illegible] much from the bite or stings of [illegible]

There is a small central puncture in every case, and they are all situated on arms, legs, and neck: exposed parts. Has any other practitioner observed this kind of attack?

Has the great heat hatched any new noxious insect? or are our gnats undergoing "progressive development" into mosquitos, or into that dire African insect mentioned by Livingstone with an unpronounceable name, having c and z in it?—**Rupex**, *Isle of Ely*.

RHUBARB AND MULBERRY WINES.

The following are two very good receipts:—

RHUBARB WINE.

Cut rhubarb as for tarts, and to every 4 lbs. add 1 gallon of boiling water. Let it stand twenty-four hours, then boil it with 3 lbs. of loaf sugar to each gallon, for half an hour; work it with yeast on toast, and afterwards put it in a cask with 1 oz. of isinglass, and 1 pint of brandy.

MULBERRY WINE.

Gather the fruit dry, squeeze and strain them to 1 pint of juice; add 1 pint of water, and 1 lb. of sugar; set it to work with a crust of bread and yeast. Afterwards put it in a cask, in which it must stand six months. When you bottle it off add a little brandy to each bottle.

OUR LETTER BOX.

Ear-lobes of Dorking Cock (*E. S.*).—The semi-white ear-lobe is quite as correct as a red one. If he is intended to be shown with pullets or hens in class, his speckled breast would disqualify him for any other than open competition. He will, therefore, be shown as a "Dorking." The breast of a "Silver Grey" must be black.

Game Fowls Sneezing (*Chester*).—The wet and cooler weather have had an influence on your fowls. They have caught cold. Give them, directly, stale bread, steeped in strong ale, three times per day till they have recovered from their sneezing. Discontinue the Indian corn, it is bad food for poultry. Give potatoes sparingly, bread freely, and ground oats once or twice per day, and give some peas daily for a week or fortnight before exhibition.

Accommodation for Fowls (*Bob*).—You may keep Spanish, Cochins, or Brahmas, in the space you name. The roosting place must not be air-tight; it wants ventilation all round, but above the perches. If the woodwork is painted, no fowls must be put in till the paint is really hard. If the wire is 6 feet high, there needs no covering at top, as the birds will not fly over.

Egg-producing Poultry (*W. F.*)—Having a supply of eggs solely in view, pullets of the darker-feathered Cochin-Chinas, and pullets of the Silver-pencilled Hamburghs are to be selected. The Cochin-Chinas will lay through the winter, and when they become broody in spring, the Hamburghs will continue the supply and never want to sit.

Game Cock's Heel Broken off (*An Amateur*).—We do not consider the loss of a heel important to a Game cock for exhibition. Those accidents only are important, which may be considered, without illiberality, to remove or conceal a defect.

Age of Pencilled Hamburgh Chickens (*Fair Play*).—We did not see the fowls in question, and cannot, therefore, give either an opinion or information on the subject. Mistakes are often made unintentionally, and in this case, the class being for Chickens of 1861, the birds would be eligible, even if they were three months older. As a proof that mistakes are made, one of our most experienced exhibitors showed a pen of chickens in a chicken class, in October, and described them as eleven months old, hatched early in January.

Stewarton-hive (*W. Johnson*).—The reply you refer to is a printer's error. It should have been No. 16 of our New Series. If you send us the Number you have purchased we will send you No. 16 in exchange. If you also buy No. 500 of our first Series, you will see in that a drawing of the hive improved.

Ligurian Queens (*A Subscriber*).—I regret to state that after devoting two seasons to the attempt, I have failed in raising a sufficient number of Ligurian queens to supply those who have applied to me. An endeavour to obtain a supply from the continent has also been unsuccessful. What adds to the annoyance is, the number of failures which have taken place in substituting Ligurian for native queens, although I gave the best instructions in my power for performing this operation in The Journal of Horticulture, of the 28th May last. My present intention is, for the future to turn my attention to multiplying stocks which will travel safely to any distance, and are free from the uncertainty attending the introduction of queens. An advantage will be offered to them who are on my list of subscribers for queens. Taylor's "Bee-keeper's Manual" contains good instructions for bee management, but I should advise "A Subscriber" to eschew collateral and nether-hiving.—A Devonshire Bee keeper.

Work on Cider (*Apples*).—We have seen no separate work on the subject since the late Mr. Knight's "Treatise on the Culture of the Apple and Pear, and on the Manufacture of Cider and Perry." The last edition, we believe, was published in 18 8. The last good essay we have heard of, is Crocker's "Art of Making and Managing Cider;" but we have never seen the volume. There is a good treatise on the subject in the "Penny Cyclopædia; another in the "Library of Useful Knowledge—British Husbandry," vol. ii.; and a third in Baxter's "Agricultural Library."

Redpolls (*W. C.*).—Redpolls are hardy little birds and easily kept; feed on canary seed. An occasional treat of mawseed may be allowed, but it is better to avoid hemp and rape seed, such being too gross for birds in confinement (it would be like keeping a clerk close at his desk all his life and feeding him on fat pork), very few get inured to it, the majority become diseased sooner or later. Clean water, sharp sand, and a good supply of green food, such as chickweed, groundsel, shepherds' purse, plantain, dandelion heads, &c., will be the best addition to the universal canary seed. The red on the head does not wholly disappear in confinement, but changes to an orange [illegible] adult cock also changes to a buff.—B. [illegible] Brent.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	NOV. 5–11, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
5	Tu	Agave virginica.	30.118–30.006	47–36	E.	—	3 af 7	25 af 4	25 6	3	16 15	309
6	W	Statice auriculæfolia.	30.368–30.300	48–35	E.	.01	5 7	23 4	39 7	4	16 13	310
7	Th	Statice conspicua.	30.450–30.394	49–23	N.E.	—	6 7	21 4	56 8	5	16 9	311
8	F	Statice cordata.	30.358–30.244	49–29	N.E.	—	8 7	20 4	15 10	6	16 5	312
9	S	Prince of Wales born, 1841.	30.271–30.182	46–27	N.E.	.06	10 7	18 4	30 11	☽	16 0	313
10	Sun	24 Sunday after Trinity.	30.067–29.908	42–35	E.	.04	12 7	16 4	morn.	8	15 54	314
11	M	Statice emarginata.	29.856–29.836	41–25	E.	—	14 7	15 4	41 0	9	15 47	315

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 51.9° and 36.8° respectively. The greatest heat, 63°, occurred on the 5th in 1852; and the lowest cold, 18°, on the 9th in 1854. During the period 122 days were fine, and on 116 rain fell.

PHASEOLUS CARACALLA—VENTILATING AND PRESERVING ICE.

THERE is a printer's error in the second name of the queer-looking flower which "D." of Deal, mentioned last week, and which he thinks might make a good greenhouse climber. From his description of it, "the buds are exactly like a ram's horn, twisted in the most curious manner," an old shepherd converted to the ancient craft of the practical gardener can readily perceive the climber is Phaseolus caracalla, and if it would submit to in-door cultivation it would, indeed, be a striking climber in a greenhouse, but it refused to do anything of the kind in my younger days. There is no plant allied to Desmodium, to Hedysarum, or to Swainsonia, in the Indian jungles, which is more impatient of in-door work, or more liable to the attacks of the red spider, than the "Hooded Runner"—the old name we had for Phaseolus caracalla. It is a case exactly opposite to that of Bougainvillæa spectabilis. Old gardeners, myself amongst the rest, knew as well as we did our pruning-knives that no mortal could bloom that plant in England to pay for its keep, while at Paris we knew it was bloomed yearly to perfection; and the cry about it, as having been conquered at last in England, was not made by men of practical knowledge, but by others who were on the wrong scent all the while—Bougainvillæa speciosa having been mistaken for spectabilis. But there is no mistake about the ram's-horn flower, in bunches like those of a Glycine.

Phaseolus caracalla would flower as freely in England in a greenhouse as a Scarlet Runner would at a cottage door, if you could grow it, and it grows as freely as Dolichos lignosus, the freest of all the old greenhouse climbers, out in the open air in most parts of England, but will not bloom outside and inside a house. It is the most difficult plant in cultivation to do up to moderate. It is only right, then, to give the warning in time.

I am firmly of the opinion that our credit here in England for fair play, fair criticism, and fair, honest counsel in our gardening pursuits, has been in the balance for a considerable time last past, and is beginning to tell unfavourably on us gardeners, as a class, because it is found wanting. I could go back ten or twelve years and prove from black and white, that that which is white on one side is not white on the other side, that things have been said and done when we did not expect, when we wanted rather to improve our credit, as just and fair writers on and about our things, immediately previous to 1840, when our credit was lost in the balance for blights.

Take one example of what I allude to, and then decide. What would they say of one who announced only a week or two back that the ventilating of ice-houses was a new invention over from America, not from Paris this time, while there is hardly one whole volume of this Journal from the second year of its age, which does not recommend that process as the very best and safest way to keep ice? And in one of the early volumes it was told and explained that an M.P., who may *now* be said sat *then* for some part of Cheshire, had instructed The Cottage Gardener to keep ice where he never could keep it before, that The Cottage Gardener did as the M.P. said, and found it to be the real secret for keeping ice, and that the "invention" was due to a London architect. Now, all these people, and all our own readers, know all that very well, and they, or none of them, would now fight for or against the Americans for a new invention which we ourselves sent over to America twelve years back.

Now, this ice "invention" will be a very serious business this winter. Suppose the ice will be a foot thick, how do you mean to keep it—Wenham Lake fashion, or how? But suppose the ice shall not be thicker in the winter of 1861-62 than the old sixpenny pieces were which were called in with the rest of the sillar in 1816?

How will such ice, or how can such ice, escape deluge and destruction if it is pent up in old ice-houses, with so many doors in the passage to the ice-well, and so much straw stuffed between every pair of doors? It would be all up with it ere the dog days were in.

But suppose the ice shall be just at the skating-point of firmness, how will you proceed? Will you try this American invention of ventilation, or will you chance it, and put up fifty loads of it for every fifteen you may want and for every five which will be used? The more ice the more labour in cold weather, and the more labour the more hearts will be warmed—not by the ice, of course, but with the toast and hot ale which should come in at the pounding, and pummelling, and stamping-points of the process.

The first thing to be done about ice is to see, before Lord Mayor's day, that the ice-house is or has been perfectly swept and cleaned out, and is then as dry as a mealy Potato, and if it is not so dry and smells just as sweet, that will be the first error. Then see to it at once. The second step about ice, in country places, is to be taken when all the autumn leaves are down. You are to see that the pools, or ponds, or lakes from which the crust is to be procured are not choked with the fallen leaves, or those of Water Lilies, or with Rush-like growths, and also that no sewage-like runnings have found their way to where the ice is to be had. And the third step involves two more steps, the third itself being to begin collecting ice in such a winter as this is to be, when it is as thick as a half-crown piece, for it keeps all the better by the "American invention"—at least it used to do so with me fifteen years back, when it could be had no thicker than two half-crown pieces put together. The two steps which are involved in the third are, the one to see that all the hooks for pulling the broad sheets ashore are in the right place to find them on the morning of the first move, are in right sockets to stand out the work without repairs, and that the handles are sound and safe, and may be trusted with the weight of a man if properly handled on the centre of gravity. I have seen a man go down, front foremost, his whole length through a sheet of ice he was hauling with a rotten pole and a hook at the end of it, and his end was not far off if friends had not been near.

The other step is about the boats, carts, stages, sliders, as in running the ice down a bank, and who are to be pike-men and who the smashers, and who will pound and pack in the well the first part of the first day. Now, unless any one of these steps is taken in the right direction, the first half of the very best day of the ice season is lost, say for twenty men and eight horses—a very moderate allowance for an ordinary family with an old-fashioned ice-house. In all the old-fashioned ice-houses there is a passage from the outside to the well of ice, and through that passage the ice after being pounded outside has to be carried to the "well," and thrown in through a door in the vaulted roof. That is or was the worst arrangement of the old school. The best of such ice-houses had a man-hole on the crown or very top of the dome over the ice-well, and through that hole the ice was thrown at once from under the clubs of the pounders down into the very centre of the well. When all was finished, that top opening and all the doors and passages were stuffed with straw to keep the ice from the air, and there is where the great error rested. The moment the first particle of ice melted a vapour was formed, and the vapour being warmer than the ice, and being confined all round it, was the cause of the ice melting four times faster than it would, if it had not been in contact with the warm, moistened air.

The "American invention" is not so practically good in detail as the account of it which we sent there in 1849, as you may see by reading the first essays in the second or third volume of THE COTTAGE GARDENER, and by comparing them with the last accounts from America. When an ice-house of this description is properly ventilated, the best plan is not to put straw between the ice and the sides of the well, or house, for this reason—the ice begins to melt first next the straw, and the straw never gets dry afterwards; and after it is once wetted it helps to melt the ice, because the air cannot get at it *in a current* to dry it, or to carry the damp from it; whereas, without the straw round the sides a cavity is soon formed between the sides of the ice and the sides of the well, and as fast as the ice melts the vapour rises or is taken up by the air, according to its heat, and if in rising it gets into the current, which should be passing constantly day and night *over the bed of ice*, why it is carried away as fast as it is generated, to the great saving of the ice, and the cold caused by this evaporation is well explained in its effects on the ice by the American. But he missed the best part of the story. The whole top surface of the bed of ice ought to be rigidly excluded from the air, if that were possible, which it is not. That part of an ice-house, or ice, never begins to give way or melt till the sides are going very badly indeed. It is the vapour, rising from the sides and hovering over the surface of the ice, which melts it: therefore, very dry straw should always *rest on the surface* of the ice—a foot thick of straw there is not too much. I have scores of times found the surface as dry as tinder under that covering, while the sides all round were melting fast.

If straw could be kept dry between the ice and the walls of the ice-well it would be best to have it there of course. Now, this American invention was first set in motion by the hand which writes this in the winter of 1846 or 1847. I had a desperately bad house to manage then, and all we could make of it was to keep fruit and game a little longer than otherwise. The M.P. who had an ice-house built for himself in Cheshire ll but above ground, by a London or by some architect, ex-lained to me the natural law for keeping ice as it was told him, and as it proved to be in his new ice-house, and I got the ld house altered, and put it right as nearly as I could, and the teration did famously. The man-hole at the summit of the aulted roof was opened, and was kept open with an umbrella-ike top over it to throw off the rain. There was a well door o the vault from the side passage, and two doors in the ssage itself, besides the outer door; all these doors were re-oved, and al[illegible] traw taken out of the passage, and the outer or was ma[illegible] entilating, and thus a strong current of r got in, and [illegible] ong the passage and in over [illegible]e ice-well [illegible] a whirlwind at times. After that the ice, of course, did not melt one-quarter so much as when it had been kept close.

Philosophers have been at work on the cause or causes of those terrible avalanches you read of in alpine regions. The cause of avalanches could be explained in an old-fashioned ice-house. There is but one cause, and it is the same, and must be so in all countries and climes, for it is a law of Nature, and that law is, that all masses of ice and of snow hardened to the consistence of ice on the surface, never melt by direct heat, or by thaw on the surface, but round the sides, as the sides come in contact with rocks or hill sides, but in the lowest part under the mass, if it were a mile through, the melting goes on at six times the rate it does on the outer sides, and when there is no melting at all on the surface.

The very same process which causes the destruction of whole villages in alpine countries by these avalanches, is at work to the destruction of our ice in ill-ventilated ice-houses—that is, confined vapour from the melting of the mass is the source of all that mischief. We have so far cured our ice-house, and it is just as easy, and, indeed, more so, except the expense, to prevent the largest avalanche on record from budging an inch out of its place high up on the mountain side. And, now, to conclude, I shall test the reader who is personally interested in the ice question, by asking him if he understands the drift of the story, and if he does understand it, he can very easily explain how a pending avalanche could be avoided—that is, could be made not to slide down the mountain, and I ask for his explanation.

D. BEATON.

THE ROCKERY AND ITS FORMATION.

I CONFESS it is not without some reluctance that I address myself to the task of replying to "A SUBSCRIBER" on the subject of rockwork, as amongst the many features of gardening this is one which has received the least notice from horticultural writers, and it is also one on which we see the greatest blunders made—in fact, a piece of really well-executed artificial rockwork is so seldom met with, that I am not surprised at our correspondent calling many of them "burlesques on Nature." Nevertheless, there are some noble examples. Elvaston Castle, Derbyshire, contains some very good rockwork on an extensive scale, and arranged with a degree of natural ease and likelihood, forming a strong contrast to the quaintly cut objects in other parts of the grounds. Some very good rockwork has also been described at Redleaf, in this county (Kent), but in this case Nature has lent some assistance; and, at Belton, the noble seat of the Earl Brownlow, in Lincolnshire, there is an excellent specimen of artificial rockwork, aided materially by the river Witham, which traverses the grounds, and contributes a feature not often met with in such places; but the rockwork is well managed. A rustic-looking bridge spans the stream, which is made to appear as if issuing out of a cavern, and the river is no pigmy spring, but a stream about 20 feet wide, and apparently capable of driving a mill of 60 or 100-horse power. Nature, however, has not lent any further aid here than supplying the water, the ground being very low and flat; but the eye is so agreeably cheated, that a sort of rugged glen has all the appearance of having been formed so by Nature, yet it is not so. The hilly slopes around Belvoir Castle, the noble seat of the Duke of Rutland, Leicestershire, also present some fair examples of rockwork, though not so good as that at Belton, as Nature had done all that could be wished for in the way of preparing a steep hill, thereby rendering artificial help a comparatively easy matter. Some other places I have seen also present some fair specimens of rockwork, but the majority are sad examples of overdoing the matter.

Piles of stone against the base of a purely Grecian or Italian residence is of all plans the most improper to form rockwork. Certainly, they are often laid with a degree of accuracy that disqualifies them for that name, although they often receive it nevertheless. A mound of earth in the midst of a dressed lawn is also undeserving the name of a rockery, although there may be stones stuck into it, but they are too often done in that fantastic manner, of which no examples are to be found in Nature, as every stone must have its angular point or edge upwards, a position we rarely find in mountain scenery—in fact, as I have above said, much of the artificial rockwork met with in most places is overdone or misplaced, so that a really well-managed piece is far from common. I think that at the Botanic Gardens is good thoug[illegible] but there is [illegible]thing of the gro-
[illegible]

I believe in all the above cases that are instanced as being approved of, natural stones have been carried and arranged in the form they now assume, and I am told the floating down the river Derwent of the large stones used at Elvaston was a long and laborious job; but there are instances in which large stones have been dispensed with, and bricks and other substances fashioned into the shapes and sizes of such stones in a truly artificial manner. Of course, this requires still more taste and judgment than in the arrangement of stones ready made to hand; but when it is really well done, there is proportionately more credit at performing a feat in Nature by purely artificial means. Decidedly the best example in this way that I have seen is at Berry Hill, near Maidenhead, where a Mr. Noble had formed a very natural-looking piece of rockwork around a piece of water; the material used being, I suppose, brick coated with cement, but so well done that even the impress of age was given to it. It is some two or three years since I saw it, which, in fact, was while it was in the course of formation, but it struck me as looking remarkably well, and I have no doubt is now much improved; and the ingenious uses of cement and brick afford many parties the chance of giving their grounds the appearance of possessing huge rock stones, which they could not otherwise obtain except at great cost of transit. But there is, also, the great danger of this useful invention being also overdone by the formation of masses too huge to be expected to be natural, or forming them in a position at variance with that in which they are usually found.

Having given the above examples of artificial rockwork, as being the best I can at present call to memory as having seen, it is only fair to call attention to some cases in which Nature has already supplied the more genuine article. The rugged cliffs of many hills, not being of a chalky formation, present examples of naked and partly obscured rock as well as huge loose stones, which some terrible upheaving of the ground had hurled into their present position. These loose stones are sometimes of gigantic size. Fancy pictures to my eye the many times I have gathered Whortleberries amongst such stones in years long since gone by. Some of these stones in size and proportions equalling that of a moderate-sized haystack, and a piece of the fixed rock which overhung its foundation by a dozen feet or more was often honoured by picnic parties. Some industrious individual of a former age having formed a very large and well-shaped basin on its top, it received the dignified cognomen of the "Punch Bowl;" but its contents if ever full must have been measured by the hundred gallons. This, however, and other similar mountain features rarely form portions of dressed grounds, so I will pass on to some places where good examples of rockwork created by Nature form important features in the dressed grounds of which they form a part, and amongst the most prominent of such places Alton Towers is conspicuous. The Castle itself is perched on a high hill, or ridge, with a deep valley on two sides of it, and these valleys again rising up into abrupt rocky precipices, well clothed with becoming shrubs and trees, the natural rock presenting itself in that pristine grandeur which we may in vain attempt to imitate. Chatsworth also presents some good specimens of natural rock—in some places, however, showing the marks of the handicraft of a recent as well as a bygone age; and the rich and varied scenery of Mount Edgecomb, the seat of the noble Earl of that name, cannot well be surpassed. A noble harbour, a large and populous town, and coast scenery of every form, rocks and precipitous slopes, presenting themselves in every shape. In one instance I noticed a very good conservatory attached to the marine villa of the noble peer (not at the mansion of Mount Edgecomb), which was built against a cliff or permanent rock, the rock forming one side of it, and the interior arrangements showed that the exotics did not dislike their being in such close contact with the hard quartz, slate, and sandstone. In cases like this and others that might be mentioned, the formation of a rockery is a comparatively easy matter, and advice is needless; but in such places as are either destitute of stones, or where they only exist very sparingly, some means must be adopted to make the most of those that are to be had, and as examples of artificial as well as those of a natural kind have been adduced, I will now endeavour to describe, so far as I am able, what ought to be avoided as well as what ought to be done in the way of arranging a rockery so as to really, in some respect at least, to resemble what it is intended for.

If we examine the condition of loose stones, lying perhaps midway up an acclivity of more or less elevation, we will see that if that stone be a flat one—that is, if it be much greater in length and breadth than it is in thickness, it will in ninety-nine cases out of a hundred be found lying flatways on the sloping bank; and if the stone be an irregular cube of considerable dimensions, it will be found that the heaviest, and consequently the largest, side will be the one that is on the ground. Now this is no more than is done when we handle and throw down much smaller stones. The same laws of gravitation regulate both: hence we may learn from this in what position we ought to place stones intended to imitate these colossal examples of Nature, and always place them flatways, or in such a position as resembles the one which Nature has given us specimens of. Secondly, whenever we observe stones in a state which we think has never been disturbed by Nature, although we are told there are really very few such, yet whenever we see them in an undetached condition we invariably see such as belong to the sandstone, limestone, and freestone sections, lying all more or less in a horizontal position. Slate, quartz, and I believe granite, are often found with an angle of elevation more approaching the perpendicular; but the mass of ordinary strata lie nearer the horizontal than the perpendicular line: hence we see the propriety of again copying Nature, and arranging what stones we have to represent our imitation in courses approaching to the horizontal line—or, if there be any deviation from the level, let the inclination once given be carried on throughout. A "dip," or diagonal inclination of strata, generally extends (in a natural way) over a greater breadth of space than is often under the control of the maker of a piece of artificial work. When, therefore, portions of fixed or permanent strata are wished for (and they are perfectly proper features in rockwork), let their "dip," once begun with (if the level line be departed from), be carried out with all that is to be done.

I have already explained that if the natural features of the ground to be operated on be level, it must be broken up in such a way as to show hills or elevations which are characteristic of a rocky district. This object will be easier attained if shrubs or trees abound—in fact, I hardly know how it can be well accomplished without the aid of these accessories. For an irregular mound on a plain surface shows in an unmistakeable manner what it really is; whereas, if it were backed by a mass of shrubs, or trees and shrubs, one side of it would be so much concealed as to give the idea that the elevation was a natural one, which would not be the case if we could see round all sides of it at once, perhaps. In preparing the mound avoid all regular forms; at the same time do not digress too much to the other extreme by giving it too much of a tortuous character, which will also tell in like manner that it has been created artificially. A path may in some cases have an acute turning where a jutting stone obstructs a more direct way; but if that stone or something else in its stead did not exist, let the path, or whatever it may be, proceed in a more direct manner. In like manner in the formation of the groundwork for the rockery, let the outline be easy—all groundwork is so by nature. A long lapse of years has worn out all angular jutting points. And if we look at the most, nay all, the natural hills that I am aware of, we see the steepest portion of their sides is about the middle or halfway up, the top and bottom being always more or less concave or convex gradually merging into the level at both extremes. In like manner the artificial rockwork foundation ought to be the same, excepting in such cases as when a perpendicular cliff abruptly terminates the eminence. J. ROBSON.

(*To be continued.*)

AMARYLLIS FORMOSISSIMA PRODUCING SEED.

THE late Hon. and Rev. Wm. Herbert in his interesting work entitled "Amaryllidaceæ," speaking of Amaryllis formosissima, at page 135, says—"No instance has come to my knowledge of its bearing seed in this country," and "numberless unsuccessful attempts have been made to cross it with other genera," &c. I succeeded several years ago in obtaining a most interesting pod of seeds from it, by crossing it with Karwinski. I sowed them in a pot as soon as they were perfectly ripe, and I should imagine every one of them must have grown by the number which came up. They still remain in the same pot, but some of them have died. My old plants, their parents, have never bloomed since, to enable me to repeat the experiment, but I do not despair next season, as they have grown vigorously the last.

Martynia fragrans, too, is said to refuse to bear seeds in this country, but I have several large pods, both of the rose colour and the yellow, now hanging from the almost defunct stems. They somewhat resemble the seed-pod of the Balsam, only considerably larger.

I have succeeded in producing a fine spike of beautiful flowers from each of three of my old plants of Guernsey Lily this autumn, which I have never before accomplished.

Having to write to you, I thought I would just allude to the other trifles, and which I doubt not but other gentlemen have been able to accomplish as well as—THOS. R. DAVIS.

[Yours is the first instance to be put on record of Amaryllis formosissima having seeded at all under cultivation. Karwinski we do not know, and if you flower it next April or May along with or without formosissima, we should be very much obliged by a sight of the plant, not a cut flower. We would go a distance to see it. Do you know glauca or glaucum, and the tumbler or cytister, and is Karwinski like them, or more in the way of a Hippeaster?

We have seeded Martynia fragrans often, and never heard it was difficult to seed. The seed-pod is most curious and most horny for such a soft plant. Such "trifles" as yours are highly interesting.]

WINTER FLOWERS IN ROOMS.—No. 3.

I MUST now proceed to give some hints as to the final arrangement of bulbs already started, for these growing bouquets.

The Hyacinths and Snowdrops, Scillas and Crocuses, that I put in last month have now splendid roots, long or bushy, as the case may be, and very pleasant it has been on several mornings lately to saturate the sand in the store-plate, and gently drawing out the well-rooted bulbs to arrange them prettily in glass and china dishes.

Many people may not know of the little glass milk-pans made by Messrs. Millington, and varying in diameter from 6 inches upwards. These seem to me to be made on purpose for such beautiful little groups; and from the first day they are planted, if not beautiful they are truly interesting. The dark green of some and the narrow pale leaves of others soon begin to unclose, and to show the colour of the not yet unfolded buds; and even though we must wait some weeks for the open flower, we have, so to say, an instalment of the pleasure they will afford us later, I am very fond of a most simple and most common plan—common, that is to say, in its materials and in its easy tendency, but far from being half so common in the universal sense as I wish to see it.

For this commonest and most elegant of little floral groups, we take a round glass dish, a china old-fashioned tray, or even a common soup-plate. This dish has strewed on it a little dry silver sand about half an inch deep, and then one very large corm of some very fine blue Crocus is drawn out of the nursing-plate, and straightway placed in the centre with four others round it. Then some paler Crocuses are added, and also white ones. But the white, it must be remembered, are often slightly streaked—far from a disadvantage in forming such a group. About five very dark, twelve of the next shade, and eight quite white make the quantity that I think does best, and it is indeed a most perfect "dish."

What would be more pretty in the depth of winter than such a plate raised in the centre of a drawing-room table, or standing alone on a marble slab? Crocuses, some say, are not worth growing in-doors; but I suspect those people have grown theirs very badly, and are not, therefore, qualified to speak of the result. Crocuses must have full light, never get dry, and have their leaves well dusted with Dumont's Insect Powder as often as there is a symptom of green fly appearing, and then I think they will be well approved. Soup-plates hung up in wire baskets at windows are capital contrivances, turning them round each day. Managed thus they do not draw up. I should think it a great disgrace if the leaves of mine came up above the strong well-grown flowers.

For children nothing surely can equal the charms of Crocuses and Scillas. They really see them growing from the first day they are planted.

I prefer, however, not mixing Crocuses with anything but Tulips, unless it may be Snowdrops. An edge of Snowdrops looks well with most things.

But I must proceed to Tulips. The little Van Thol not [illegible] dish of white Crocuses. They should, however, have also a few Snowdrops dotted in amongst them.

HYACINTHS, SCILLA SIBIRICA, AND SNOWDROPS.

I have already spoken of these; but I beg to announce, for the benefit of those who are interested in others' progress, that my milk-pans are full of roots, and my Scillas and Hyacinth showing delightful points of dark green, while they require, I find, a large supply of water to be constantly added to the sand they grow in. Only two bulbs of mine have come to grief this year—two little Snowdrops they were: so, judging by the display of roots and size, I begin to think that the florists' lists are right in promising us such a splendid bloom this season.

The only other thing I must speak of to-day is the Cyclamen persicum. Both for its leaves and flowers, often so very sweet, this beautiful little plant is one of my greatest favourites. My own are very forward; but Messrs. Hooper sent me some the other day already out in blossom—quite covered, too, with beautiful little buds.

I know no plant in which it is more important to know of a good stock. Both last year and this I have bought some for trial, amongst other bulbs, which never gave one blossom and only two shabby leaves! And the price of those bulbs was exactly the same as that of the exquisite little gem now standing on my plant case—only on, not in, the case, for my plant case just now is at almost stove temperature; and the beautiful Cyclamens do charmingly in a window in a double pot, not very much watered but always in full light.

Talking of double pots, if Mr. Beaton had done nothing else for gardening, his late invention, which he calls stops and pots, would entitle him to a general vote of thanks from every one who possesses so much as a window-sill on which they want plants to thrive.

For my own part I think it delightful to have such a good and such a cheap appliance, quite as much for keeping as for growing plants—and for my new plant cases too—I can hardly tell yet the full value of the idea. I have written off immediately to ascertain the cost at which such things are to be acquired, and I hope ere long to see them in full use. But here my papers on winter flowers in rooms will merge into the use of the "In-door Plant Case," a contrivance the result of which is simply to give hothouse flowers to those who have not even a greenhouse.—E. A. M.

TEMPERATURE OF WATER FOR STOVE AQUATICS.

I HAVE just finished a large stove, in the centre of which is a cistern for growing Nymphæas; but I fancy my engineer has put too much piping in, so that the water will be too hot. Please, therefore, say what should be the temperature of water for the purpose above-mentioned.—W. K. H.

[If the tank is over 18 inches deep the surface of the water would be nearly boiling before the bottom was too hot for the roots. To get over that fix Sir Joseph Paxton hit on the plan of a constant waste of the hot water, and as constant a supply of cold water on the surface; that is the way at the Crystal Palace where Nymphæas do remarkably well, and keep green till long after the New Year. If your tank is not over 70° to 80° on the surface long together the roots will take no hurt, as then the bottom of the tank will hardly be up to 60°; but 70° would be the proper pitch from April to October, and 60° for the winter months.]

FORCING STRAWBERRIES, KIDNEY BEANS, AND POTATOES IN A PIT.

SCALE ON AN ACACIA.

I HAVE a six-light pit. There are three divisions separated by a four-and-half-inch brick wall. I have the command of top and bottom heat from hot-water pipes. There are no stop-cocks in them, so that I shall be obliged to use them all at the same time, which makes it very awkward. I am to force Strawberries in one division, Dwarf Kidney Beans in the second, and Potatoes in the third. I want to have all three ready for table by the 1st of May, 1862. The Strawberries I have for forcing are Keens' Seedling and Prince of Wales. What kind of Potato and Kidney Bean would you recommend for forcing? and would you recommend me to grow the Beans in pots, or to make a bed for them over the pipes? The bottom pipes are 3 feet 6 inches from the glass. I was thinking of making a chamber, so as to leave about 12 inches or 15 inches between the pipes and the bottom of the bed.

I have three Acacia armata plants, all the lower parts are covered with a kind of mildew. I have enclosed a few leaves for your inspection.—G. S.

[There is no difficulty or awkwardness in the management of your pits. You may have a chamber if you like above the pipes, but we would put some clinkers and brickbats, and then some sweet dung and leaves in the two parts designed for Beans and Potatoes, and soil above them if crops are to be planted out, or if in pots plunge the pots, to give a little bottom heat. Whether you have clinkers or not in the Strawberry division, the plants will do best on shelves at an early period. As soon as the fruit is set you might plunge the pots also in a bed of leaves, with rotten leaves on the top. In either case the plants should not be more than a *foot* from the glass. We would also alter your arrangements, and place the Beans next the boiler, the Strawberries next, and the Potatoes farthest off. If you are new to the work, the Beans might as well be in pots, five or six in a twelve-inch pot. China dwarf and Sion-House-forcing are as good as any, and the Newington Wonder, a small Bean, if it is desired to cook them whole. The Potatoes may either be in pots or planted out, two sets in a similar-sized pot. Nothing, in our opinion, beats the Ash-leaved Kidney now. You do not tell us how the bottom heat is given, whether the top pipes return, or you can give bottom heat independently of top heat. If the plants are in pots, you can regulate the bottom heat to a nicety, by raising the pots a little; but in either case if well managed you are not likely to have too much of it. The Beans should be sown about the beginning of March. It will be best to be time enough in case the weather should be dull—say, therefore, last week in February. Bottom heat from 70° to 80°, top heat at night from 60° to 65° by day, from 65° to 75° in sunshine. Strawberries, begin with from 45° to 50°, increase from 55° to 65° when in bloom, and from 65° to 70° when ripening, and a drier atmosphere. Potatoes commence with bottom heat of 70°, and top heat of 50°. The top heat from artificial means should not be higher than from 55° to 65°, with a rise from sunshine, and plenty of air given. With your divisions there will be no difficulty in all this. You must first give more or less air in proportion as you want a low or a high temperature. In such a pit we have grown Cucumbers in one division, and Geraniums in another. If you can protect your Strawberry plants from heavy rains, frost, &c., during winter, all the better for them. See "Doings of Last Week," in last Number.

Your Acacia armata is smothered with white scale. If all is as bad as the sample, cleaning the whole plant is impossible. We advise cutting off all the twigs, leaving only the bare skeleton, then wash and scrub that with soap and water, when dry rub it again all over with a thin solution of glue water, and let the plant stand in a shed for a week. Then scrub it again with water about 100°. This will pretty well destroy every insect and egg left on the bare skeletons. You may then place the plants below the stage in the greenhouse, and see that the pots are not quite dry. Next spring they will break all over and furnish you with healthy shoots. If you could give the plants a little heat in a forcing-house in spring you will get the shoots forward enough to be ripened, and bloom the following winter and spring.]

OLD APRICOT TREES UNFRUITFUL.

CALCEOLARIA SEEDLINGS—SCARLET GERANIUMS IN A FRAME.

I have some Apricot trees from fifteen to twenty years old, they do not bear very well. Do you think them too old to root-prune? If not, how close should the large roots be cut?

I have some Calceolaria plants from a sowing last spring, I find they are starting for flower. Do you think they will flower as well next month as in the spring? Or should I pinch them back? I have them in a cool frame with plenty of pot room.

Do you think Tom Thumb Geraniums will stand the winter planted close together under a glass frame?

Will Variegated Mint stand in the open ground, I mean the sort that is used for edging flower-beds?—T. H. J.

[We should prefer raising the roots of the Apricots and bringing them nearer the surface—say 6 inches, and this would enable you to go within 18 inches of the bole and see there was no strong tap root. We are supposing that the trees are barren from extra luxuriance, but you do not say so. Perhaps the wood is too thick, and left dangling from the wall so that the sun cannot get at it.

The Calceolarias will bloom in a house averaging 45°; but as the weather may be expected to be dark they will not bloom so well as in spring. Better select the forwardest, and stop the others as you suggest; if the pots are full of roots, give a small shift now, and a larger one after Christmas. Too much pot room in November and the beginning of December is apt to bring on damp, more especially if you have only a cold frame or pit to keep them in.

The Tom Thumb may be kept safely under a glass frame, but not if a person goes to sleep on a frosty night, and gives no covering, or allows the glass sashes to be a fixture for weeks in dull damp weather.

The Variegated Mint is quite hardy, and does best when cut into small pieces and planted every spring. To make doubly sure, however, you may put some in a pot or shed; but the frost last winter never touched it, and after that it is likely to stand anything.]

THE MUSHROOM AND ITS CULTURE.

There are few cultivated articles in which greater uncertainty exists than in a crop of Mushrooms when grown under artificial treatment; for uncertain, and in some respects capricious in a wild or natural state, they are still more so when we endeavour to obtain them in a season the reverse to that in which they are produced naturally: so that, in spite of all our care, it sometimes happens that failures occur when least expected; and, on the contrary, it sometimes happens that a very careless putting together of materials is rewarded with success. But the latter case is the exception, the rule being that, in a general way, judicious management will bring a good crop (and it often happens to be so), and a little pains taken to secure this will in most cases be rewarded. And as the means and appliances for this desirable result are far from being of difficult access, the following instructions will usually prove successful.

Mushrooms, as is well known, grow best in the mild moist evenings of autumn before frosts set in, and before the ground gets cooled down to the winter temperature; but, in fact, as long as sharp frosts keep away, there will generally be Mushrooms in those pastures where they are wont to grow, and though the days may be mild and warm, the growth of the Mushrooms is greater at night than during the day, thus proving that darkness is one of the conditions necessary to their doing well. Certain meadows have the character of producing Mushrooms in greater abundance than others, but it is difficult to describe what kind of soil suits them best. A loamy soil overlying limestone is often a good place for them; but the opinion of old people residents of the locality is of more worth in determining the whereabouts of a good Mushroom-field than any learned disquisition on the subject. But as this is foreign to the subject of growing Mushrooms by artificial means, it is needless proceeding further in the matter than to show that one of the conditions of their growth, "darkness," may be copied in the artificial treatment.

The first thing to do in the way of preparing materials for growing Mushrooms is to obtain a quantity of fresh horsedung that has not been heated. This latter condition is absolutely necessary, and where there is a difficulty in obtaining a quantity this way that has not been heated, it is advisable to make some terms with the stable-keepers, and remove the dung every day, spreading it out not more than a foot thick on the floor of some open shed, or it might be under a tree, or anywhere secure from rain; turn it every day or so until it be partly dry, and when a sufficient quantity is ready a bed may be made. Generally speaking, the end of September is as early as most people make Mushroom-beds, and from that time up to Christmas they may be made in succession as wanted. About six weeks after being made is as soon as Mushrooms may be expected, sometimes they come sooner, but often much later. The situation for a bed is not material—any place not too damp, but secure from rain and frosts will do. One of the best Mushroom-beds I ever had was under a tree covered up pretty thickly with litter to keep out the frost; and this bed answered admirably, producing abundance of Mushrooms in long succession. The bed was formed as a ridge with a base of about 5 feet and as steep as it could well be made, with the short loose dung trod firmly up to the ridge. Being spawned and covered with mould in the usual way, well beat over, and covered up with litter, it received no further attention than uncovering and gathering the crop, and a heavy watering towards the end of the season to revive it again, which it did for a time. But it is needless to say that for an out-door bed like this more dung was used than would make several shelf-beds in a well-constructed Mushroom-house. A lean-to shed is also a pretty good place for a bed, and if it be a very cold place a greater proportion of dung must be used than if it were warmer; somewhat like 15 inches of solid dung well trod on will not be too much, taking care to have the dung tempered by exposure and frequent turning before making up, and in such a place a good crop may be expected. A cellar is also a very good place for a Mushroom-bed, and certainly better than any open airy place; for Mushrooms seem to like a still atmosphere—almost stagnant in so far as regards motion, so that a large airy apartment, however useful for most other things, seems unnecessary, if not absolutely hurtful, to the Mushroom; so that amongst the many places we hear of their being produced, in very exposed places are the most rare. Many years ago I saw some excellent Mushrooms that had been grown in a coal mine some 300 feet or more below the surface, where horses were kept for use, and remained continually so long as they were healthy. Odd corners in a disused stable are very good places for Mushrooms, the conditions of their growth being the same in all places; well-prepared horsedung and mould, with a little spawn to set the fungus going, and a close confined atmosphere rather moist than dry are all the conditions necessary to insure success.

Where there is the advantage of a Mushroom-house with shelves 9 inches or 10 inches deep, with an application of fire heat when needed, the difficulty and uncertainty of obtaining Mushrooms are very much reduced, and beds may be formed in succession, and spawned so as to obtain a crop all the winter. Dung well sweetened by turning may be formed into beds, and as treading is out of the question in such places, a wooden hammer, like a carpenter's mallet, must be used, as firmness is an essential qualification to make the beds do well.

If means be taken to prepare the dung before using there will rarely be any more heat than is requisite to make the spawn spread; but if any doubts exist on this head it is better to allow the bed about a week to ascertain this point, and the spawn, which is often in lumps like bricks, may be broken into pieces about the size of an ordinary Potato, and inserted over the bed at distances of 6 inches or so apart. Generally, if spawn has to be bought, it is used sparingly; but if the grower make it himself, it may be used more freely. Fill up the holes and beat the bed well when it is spawned, and in a day or two after cover it with loamy soil fresh from a pasture field—I do not like the soil from tillage ground so well—beating the surface smooth with the flat side of a spade completes the job, except covering it over with litter; and keeping the surface frequently sprinkled with water will assist the spawn in spreading, and when the Mushrooms appear give a little more water, but no heavy waterings until the bed shows symptoms of languishing, when it must have a reviver by a good heavy watering. When the spawn begins to run care must be taken that it does not exhaust itself by running amongst the loose litter used as covering: if this should show symptoms of stringy whiteness in it remove it altogether, and substitute fresh litter; but moving it occasionally will prevent this in a great measure, and, if possible, to let these operations be done on mild days, without-door or open shed beds, as high drying winds, or clear frosts, are pernicious to this vegetable. Most other conditions will suggest themselves to the operator; but the subject of making spawn and some other features bearing on this eccentric crop will b[illegible] [illegible] communication.

[illegible]. ROBSON.

[illegible]RIEGATION [illegible] [illegible]ISEASE?

[illegible] first opened this subje[illegible] being one [illegible] whic[illegible] took great interest and [illegible] me time making observa[illegible]ons, I little thought it would lead to [illegible] an interesting [illegible]cussion. As I lay on a si[illegible]ed and read the various remark[illegible] Mr. Beaton and oth[illegible] opinions carry weight wit[illegible] [illegible], I felt pleased th[illegible] the matter, as I n[illegible] [illegible] [illegible]scussion to see th[illegible] [illegible] arena, whose experience, practice, and observation would lead one to take in all for indisputable facts, I feel it is no light matter to contest against such men. And here allow me to say in reply to Mr. Anderson Henry's question, that "NICKERBOR" has a reason why he does not write his name in full—he is not ambitious of seeing his name in print.

Mr. Anderson Henry, in his article, page 41, says, "'NICKERBOR' can by his experiment—*i.e.*, the peculiar cross mentioned there, 'maintain nothing against disease being the cause of variegation.'" Now, the contrary is the fact. I do distinctly maintain that by the experiment Mr. Anderson Henry clearly proves that there was no disease; but if, as Mr. Beaton suggests, that the subject lies in the meaning of the terms used there is an end of the subject, it is only play upon words, and not as I understand the matter, which is to try and find out the cause or causes of variegation. I admit that there is more than one cause, and if the doctrine of Mr. Beaton is sound, that it is caused by the pollen of the male parent; and as Mr. Anderson Henry endorses the same view, which is in opposition to the theory of Dr. Morrens, at page 383 of your last year's volume, where he observes that these observations naturally lead the mind to seek in the effect of respiration the cause of the phenomena of variegation. I still contend that we have not sufficient evidence to prove that these are the only causes.

But let us take the matter up in order. Mr. Anderson Henry says, "I can maintain nothing against disease being the cause of variegation, in his experiment, which is said to be caused by the pollen of the male parent." Now, al low me to ask why is not the progeny of the inverted cross, which is described as having washy, pale-coloured blooms with plain ordinary green leaves—why is not that called disease? That disease is in the flower, if it is disease in the other case; so in this the one is developed in the flower, the other in the foliage. We all well know that disease in plants is of frequent occurrence, and that plants are subject to many diseases who can or does doubt? But who ever saw a thoroughly diseased plant show its disease in splendid variations of colour in the same leaf? hence we have the result of two inverted crosses—perhaps unprecedented; and, yet, only one of the two is called diseased. How did that pollen become diseased? Would the most powerful microscope show it? Or how are we to know that that was diseased? It is only a supposition, and for anything which has yet appeared, the variegated progeny grew well, and to all appearance to all ordinary observers as healthy as "Old Tom" himself appears at the present day, despite his numerous progeny: therefore, I contend that instead of a disease it was a chemical change in the component part of the plant developing itself in the leaf, as much as in the first cross in the bloom. There was a chemical change in the colour, the white and scarlet mixing; and, as a natural consequence, the bright scarlet was decreased by the white. I am not going to attempt an explanation of the phenomenon; but from the observations I have made during twenty-five years practice, I feel persuaded that it will be found to result from the soil, and the water absorbed by the roots.

Having just read Mr. Beaton's article in the current Number, I find he holds views something similar, at least so I deduce from his remarks, "that after growing the two for one season in his soil he could get every seedling from the same cross as Mr. Anderson Henry as true as seedlings from Tom Thumb." I saw a few days since a lot of seedling Geraniums, the progeny from a cross of two variegated seedlings, and more than nine-tenths were plain green-leaved, or green with a dark zone. Will Mr. Anderson Henry be kind enough to explain how two "diseased" or variegated Geraniums, if it is disease, should produce a healthy race? for if I understand the matter correctly, according to holders of the disease theory, any variation or departure from a green foliage is disease. Has it never occurred to many of your readers that during the last few years, since chemistry has been studied and artificial manures used, and that with high culture we have had an immense quantity of variegation from the original varieties, not only Geraniums, but other plants, both exotic and indigenous, and that when once a variegated variety, or, as is often the case, a discoloured variety is introduced, how soon we have a race of variegations of various forms in that same family. Look at the handsome Begonias, Caladiums, &c., and who can say how long ere we shall have an inundation of variations in Ferns? We have now of Pteris three variegated [illegible]ieties, and who can suppose that our successful raisers of the [illegible]s forms of Ferns will not try their hand, and soon have [illegible] [illegible] beautiful-marked ornamental forms? [illegible], perhaps, not generally known that madder given to an animal for a time continuously will dye the bone and hair of such animal; and if such is the case in the animal kingdom, may we not reasonably expect that there is to be found some chemical compound, or dye, or acid, which would dye or blanch the whole or parts of a leaf, or leafstalk or stem of a plant? May not there be a chemical action going on in the atmosphere or soil, decomposing or partially decomposing the water in such soil which is absorbed by the roots, and thus cause variations in a way we may not be able to explain, but which may, perhaps, be borne out by experience? Let us all enter on a series of experiments, in whichever way we may think is the most reasonable according to his point of view, whether by chemical experiments or by crossing with pollens from various flowers, carefully noting the experiments and results, and we shall as surely arrive at a satisfactory conclusion as to the cause or causes, as the chemist or colour maker in the dye or printworks, of Manchester, arrives at the reasons why or wherefore certain gases, drugs, or chemicals, cause a certain shade of colour.

I shall not dispute the point as to variegation causing dwarfness, that is a point I shall not interfere with; but I do not think in every case that will hold good. Neither will I go on any further, as I shall be taking up your pages too much with what will, perhaps, be thought by many nonsense. I had intended to contest the matter further on other grounds; but enough at present. I shall try a variety of experiments with a view of ascertaining if variegation cannot be, and is not caused more by absorption by the roots than by respiration or pollen, be it either male or female parents, not only in Geraniums but other plants likewise; and if I can produce any variegation or variation by artificial means, I will note the results and submit them to you, as my only aim is to elicit truth. We see and admire certain effects, let us not rest until we trace the cause to its origin.—Nickerbob.

CULTIVATION AND MANURE AS FERTILISING AGENTS.

By Henry Tanner, *Professor of Agriculture, Queen's College, Birmingham.*

(*Continued from Vol. I., page* 421.)

The tillage of the land is designed to prepare it for the germination of the seed, and, finally, the perfection of the crop. For the accomplishment of the former the land has to be brought into a state favourable for the germination of the seed, or, in more general terms, I should say into that free and loose condition which is known to be so necessary a preparation for sowing. This condition, which is favourable for the first growth, is equally so for the subsequent perfection of the crop. The operations by which this result is gained consist of ploughing, rolling, harrowing, &c., and these are very beneficial in increasing the fertility of the land—in fact, we may view them as so many means for exposing the various parts of the soil to the action of the air, rain, frost, and light.

I have already stated that the carbonic acid and oxygen carried into the soil promote the chemical changes which awaken the dormant ingredients of the soil, and bring them into active exercise. In like manner those parts of the soil which are upon the surface are exposed to these chemical changes, and thus a ceaseless action appears to be going on between them. This change is one by which the mineral matter of the soil is acted upon; but, in addition to this, we have other changes produced—viz., the decay of the organic matter of the soil; for the air and moisture promote changes in its character, and thus render it valuable for promoting vegetable nutrition. It is, however, worthy of note that, whilst the organic matter of the soil is undergoing decay or decomposition, this change favours and promotes the conversion of the mineral matter of the soil from a comparatively useless state into a condition suited for the wants of our crops. Any process or operation which stirs the soil, and brings fresh portions under the influence of decomposition, promotes these changes in the organic and the mineral matter of the soil, thereby rendering them available for the nutrition of our crops.

In this manner the stores of the soil are opened up and rendered useful; but I have now to show that tillage operations not only accomplish this desirable result, but they also prepare the soil for abstracting from the atmosphere fertilising matter. The value of ammonia as a manure is well known, and upon its action the beneficial character of many of our manures is based. It is an expensive manure, but still its judicious use is remunerative in a very high degree. We send many thousands of miles for a large portion of our supplies; yet it is found in the atmosphere floating around us, and is there present in a condition available for the use of vegetation. It is not necessary or desirable for me to refer to the sources from whence it is supplied to the atmosphere; it is enough for us to know the valuable fact that there are abundant stores prepared for the cultivator who is ready to receive a supply therefrom. It is with great pleasure that I refer to a very valuable contribution to our knowledge of the principles which regulate agricultural practice by Professor Way. It will be found in the sixteenth volume of the Royal Agricultural Society's Journal. He there proved the presence of nitric acid and ammonia in the atmosphere; that these bodies are removed from the air in two ways—by the absorptive powers of the soil, and by the rain dissolving them and carrying them into the soil. He very judiciously remarks: "The atmosphere is to the farmer like the sea to the fisherman, and he who spreads his nets the widest will catch the most." It is not that all land derives equal advantage from this magazine of wealth, but land receives and profits just in proportion as the industry and intelligence of man render it capable of drinking in these fertilising matters.

Thus you observe there are two channels through which the nitric acid and ammonia of the atmosphere become introduced into the soil—the one by the direct absorptive powers of the soil, and the other by the intervention of rain bringing fresh stores within reach of the soil. With regard to the former of them, I may say, that although it does not come properly within the limits of the subject under our notice, still the practical connection is so manifest that I shall not refrain from going into some brief notice of it; but before doing so, I shall notice the agency of rain. This must be viewed as an assistant agent which gathers the accumulations in the atmosphere, and brings them within the influence of the absorptive powers of the soil. If, therefore, such rain passes away on the surface without entering into the soil, it is manifest that its services are lost: hence land, which by natural or artificial drainage allows the rain to pass through it, carries into the soil its hidden treasure, which in any other case would pass away to some other recipient, or to the nearest streamlet. The value of its assistance to any agriculturist simply depends upon its services being accepted and turned to some useful account, or else rejected, and its agency wasted.

We may now notice the absorbent powers of our soils. The researches of Professor Way (published in the "Journal of the Royal Agricultural Society," vol. xv.) are of the deepest importance to agriculturists. I will, therefore, briefly bring before you the results of these researches. It was observed that when a solution containing ammonia, or other alkaline salts, was passed through a portion of soil, the soil separated the ammonia from the liquid, preserving it from being again washed out of the soil; and this action was finally traced to the presence of bodies in the soil known as the double silicates. A silicate is a compound of silica with another body—say, for instance, silica and soda produce a silicate of soda; but the double silicates are very peculiar, for in these we have silica combining not with one body, but with two bodies—for example, there is the double silicate of soda and alumina, the double silicate of lime and alumina, and a third, which is the double silicate of ammonia and alumina. But you will observe that alumina is present in each, and the only difference is that soda is present in the first, lime is present in the second, and ammonia in the third. In most soils we find these double silicates present, but their value varies very considerably. We may now observe the difference in their character and mode of action. The double silicate of soda and the double silicate of lime are each capable of separating ammonia when it is dissolved in water, but the double silicate of lime alone has the power of separating ammonia from the air; the double silicate of lime is, therefore, decidedly the more valuable salt of the two. The double silicate of soda is readily converted into double silicate of lime when lime is added to the soil: consequently, the addition of lime to the soil renders it competent to absorb more ammonia from the atmosphere, and thereby gives it greater powers of acquiring fertilising matter than it previously possessed.

In addition to this benefit, another desirable result has been attained by the use of lime—viz., that, as nearly all soils contain ammonia in them in a dormant state, the use of lime displaces part of this ammonia, and thereby this fertilising matter becomes available for the plants growing in the land.

Thus it is seen that in the soil there are bodies capable of separating ammonia from the rain as well as from the atmosphere, and afterwards preserving these fertilising stores until required for the crop. We have in the use of lime a double advantage—it not only gives the soil superior powers of acquiring that valuable fertilising matter—ammonia, but it also renders the existing stores of dormant ammonia ready for active service in promoting vegetation. It is, however, of no practical value to us having in our soils the means of accumulating fertilising matter, if, at the same time, we place it in a position in which this power is rendered inoperative: consequently, we have two means by which to promote the accumulation of ammonia in the soil, and these are—1st, increasing the capabilities of the soil to absorb ammonia; and 2nd, giving the atmosphere a free access to the soil, so that these powers may come into full operation. The addition of lime to the land has, in this respect, a double action—viz., it sets part of the ammonia in the soil free, and available for promoting vegetable growth; and it also renders the soil more competent for accumulating a store which will maintain the fertility of the land, and thus we have in the use of lime as a manure a valuable means of realising the first requirement—an increased absorbing power. The attention may now, however, be advantageously directed to the facilities for the increase of these powers, and these are manifestly twofold—viz., the exposure of the soil fully to the air, and the passage of rain through the land. The tillage of the land is, therefore, just the agency required to accomplish this desirable result; for, as I have said before, the inversion, stirring, and crushing of the soil by the various operations of ploughing, cultivating, harrowing, and rolling, each and all promote the exposure of fresh portions of the soil for atmospheric action; and whatever capability is possessed for the secretion of ammonia, the soil is thus furnished with the opportunity for its exercise.—(*Transactions of Highland Society.*)

LEVEL AND DISTANCE OF HOT-WATER PIPES FROM FLOOR.

Will you oblige me with your opinion, what the height the hot-water pipes (four-inch) should be from the floor in a small greenhouse? Also, if the pipes should be laid level? Size of greenhouse 14 feet by 10 feet, but may be enlarged.—Wm. Liversidge.

[The pipes may be placed at any height most suitable, but if they are from 4 inches to 6 inches or more above the floor it will be high enough so that they clear it, and there are sound supports against the joints. We think the heat is given off better when the pipes are laid down side by side, instead of above each other; for instance, if three pipes are needed for such a house, two flows and a return, though one of each would do then, we would place them so ○○○, instead of but then in a fourteen-feet length we would raise the flow-pipe 2 inches or 3 inches to the extreme end, and then the return-pipe would dip that much backwards.]

THE OCTOBER JUST ENDED.

The month that is just past has been, in many respects, one of the most remarkable (for October) on record. The preceding two months having been fine, dry, and hot, the ground had become very dry, when it was refreshed by some useful rains the last week in September; and warm days, and, what was more remarkable, warm nights following, the growth of Grass, Turnips, and most kinds of garden produce was very rapid, the warm weather of the dog days continuing up to the middle of October, when on the 15th of that month the thermometer in the shade reached 79°. Several preceding days were 76°, 75°, and 74°, while the nights indicated 54°, 53°, and 52°, as the lowest it had fallen to. This extraordinary warmth was, perhaps, more favourable to the vegetable kingdom than healthy to the human race, the close, oppressive heat of October being worse to bear than a July's sun, but after the middle of the month it became a little cooler; but it was not until the 27th that the thermometer fell below 40°, and on that evening, and also on the 28th and 30th the thermometer registered respectively 39°, 39° and 38°, and the lowest maximum point for the day being 55° on the 28th.

It is certainly very unusual for October to pass away without the appearance of a frost. Generally we have three or four, and sometimes as many as eight frosty nights in October. This year none. The natural consequence of so mild an autumn has been high[illegible] favourab[illegible] the various kitchen garden crops. Scarlet Runner Beans have not yet yielded their last picking, Celery has been growing fast, and all the Cabbage and Broccoli tribe have grown almost out of character, particularly Brussels Sprouts, and the various families of Greens. The fine, warm, sunny days have also matured the buds of fruit trees, so that a plentiful supply of blossom, if not of fruit, may be expected next year; while in the flower garden the mild, warm weather has been equally beneficial. Geraniums, which the rains at the end of September had in a measure deprived of their bloom, commenced flowering afresh, and about the 21st of the month were as brilliant and gay almost as at the very best part of the season; but such unusual, I might almost say unnatural bloom, was not destined to be of long duration—about sixty hours. Heavy dew and slow, hazy rain were more than they could bear, and many of them drooped to rise no more. Tropæolum, which also bloomed remarkably well, stood the damp better, as also did Lobelia, Salvia, and Verbena. Some plants of Verbena Purple King, in ribbon-borders, looking quite gay at the end of the month, while the apparent mildness of the weather rendered it unnecessary to disturb such plants which it is customary to take up, as Geranium Golden Chain, and others, until the very last day of the month, and some left still later. Most other flowering plants also look well, and the fine autumn will certainly do much to remedy the evils of the severe winter of last year, and such plants as Magnolias have recovered their wonted health, and I noticed a flower on one, which is, perhaps, far from a common thing the present season. Several Yucca gloriosas have also run up into flower in the past month, and I should say it must have been an excellent time to save seeds of late-ripening things; while patches of Geraniums, of the white variegated kind, look more gay than at any time during the season, especially such kinds as do not lose their leaves in the autumn, and it is only such kinds that are really worth cultivating.

To those who are interested in meteorology, the following notes may be of service:—

Rain during the month of October, 1861, at Linton ...	.89 inches.
Do. average at Linton during the last seven years......	2.81 inches.
Average maximum thermometer ranges in Oct., 1861	67°
Average ditto of last seven years..............................	57°.4.

With the exception of January, October has been the driest month this year. Neither has there been much fog, and very little high wind. The weather, in fact, being more in the character of late summer than autumn. Some winds on the 30th rendered the turnpike dust troublesome, an unusual occurrence at the end of October.—J. Robson.

A LONG-KEEPING ORANGE.

On reading your account of the Osage Orange, it brought to my recollection a circumstance that happened twenty-two years back. I was in the Botanical Gardens, Dapporee, near Poonah, Bombay, when the gardener gave me an Orange from a tree obtained from the Island of Johanna, in the Mozambique, which had the rare quality of keeping good and sound six months. It was of very large size compared with what are sold in England, and a most delicious fruit. I only mention the circumstance as it is possible it may be of a hardy sort.—A. S. F.

MR. ROBSON'S REMARKS ON FRUIT CULTURE.

I think I have managed to wade through those weary columns in No. 31, written by Mr. Robson in defence of his stand-stillism, and I have in vain tried to comprehend his motive for writing them. If he could have given his own experience—say for the last seven years—in the culture of orchard-house fruit, and why he had failed, if failure had taken place, or if he had during that space of time paid visits to Sawbridgeworth, to Trentham, to Reigate Lodge, to Mr. Crowley, and numerous others near Alton, to Basing Park, to Audley End, &c., and have given a fair unprejudiced opinion of how the system worked, he would have been a real benefactor to your readers. Instead of this he writes about old recollections of the system not being new, and of old things he has seen, of old failures from bad practice, then sneers at the very excellent name given to the culture of fruit under glass, does the same at some other mode of cultivating fruit trees in gardens (I suppose he means the removal or root-pruning system), and, in fact, gives your readers but a poor idea of his capabilities, [illegible] presume [illegible] living in Kent with the finest sites and soil in England for orchards, and with orchards so barbarously planted and managed as to be a disgrace to the county, he has imbibed, unknown to himself, a set of stand-still ideas with regard to fruit culture.

I paid, a few weeks since, my annual visit to Kent, where I always spend a few days rambling about that agreeable county, and there met the well-known author of the "Fruit Manual." We visited in company some of the orchards diverging from Greenhithe to the south, occupying a large tract of country with a fine soil, and abounding in excellent sites for orchards.

What did we see but backwardness of fruit-tree culture almost incredible? In large orchards, on one side might be seen some old decaying Pear and Apple trees; on another side some young trees thrust into the turf and trying hard to live and grow. No arrangement of trees in regular rows, each row of one sort to facilitate gathering the fruit as they ought to be. No pruning, no method, but all confusion confounded.

Mr. Robson who, I believe, has told us how to manage a miniature farm (a miniature fruit garden he seems to look at with distrust), ought to have enlightened the Kentish orchardists; but I am quite inclined to think, that living near one of these antiquated orchards would bring in a sort of Rip-Van-Winkle feeling. I looked at the mossy, decayed stems of the old trees, got into a reverie about the progress of age and decay, thought about Mr. Robson and his Crystal Palace fruits, till I had fashioned him into a nice mossy old Apple tree, giving but little fruit, and not making much progress. I have a firm belief that I also should grow mossy if I lived in such a neighbourhood, and so I freely forgive him for his rather prosy style, and advise him as a friend, to remove from such a stand-still district.

One word more. Mr. R. says, alluding to his own remarks on the Crystal Palace Show, "I did not assume to describe all that was at the Show." No. He went there with one eye closed and the other not open, to see what was unfavourable to his peculiar views. "None are so blind as those who will not see."—Constant Reader.

STRAWBERRIES IN ORCHARD-HOUSE.

PUTTING ITS TREES OUTSIDE.

I have this day (Oct. 24th) removed from the garden to the orchard-house two hundred pots of Strawberries, May Queen and Keens' Seedling. I have done so for the purpose of keeping them dry, the plants are fine. Am I right in so doing? and may I continue them in the orchard-house until the time for forcing? I have removed my orchard-house trees into the garden for the purpose of ripening the wood. Shall I be right in allowing them to remain in the garden for the next two months?—A Subscriber.

[You have done right with the Strawberries. The pots had better be plunged in earth or leaves, and will need no water unless they show signs of flagging.

If the orchard trees are not ripening their wood we see little use in putting them outside now. The propriety of keeping them out will depend on the sorts and the weather. If you should have a severe frost before two months, we would rather have them inside and the pots protected too.]

THE MUSCAT HAMBURGH GRAPE.

You are evidently under a very erroneous impression about the Muscat Hamburgh Grape—at least I should say so by your condemnation to "E. C.," at page 466, on September 10, and which has only been shown to me by "E. C.'s" gardener calling here the other day to see our Grapes.

I am sure you wish to be honest, and not condemn a good Grape. Come and see it growing here—judge for yourself whether it merits the censure you have heaped upon it. We have it growing in, no doubt, the largest orchard-house in England (105 feet by 41 and 20 feet), growing and fruiting fine, in a border made only fit to grow Mangold Wurtzel; certainly no preparation further than that—not a particle of heat beyond the sun's rays. The fruit sets well, swells well, colours well, and ripens well, and what more do you want? Do justice in all things.—Jas. Finlayson, *The Park*, *Leytonstone*.

[We are most happy to hear your statement about the Muscat Hamburgh Grape. It is a Grape we have always had a strong liking for, and it is one which, when well grown, is unsurpassed in flavour; but we have seen it so frequently set badly, and heard so much of its having that bad habit, that we gave what we believed to be our best advice. In the forcing-pit of the Horticultural Society this season it set very badly; while in the large vinery it set well, though the bunches were not large.—Eds. J. of H.]

PITS HEATED BY DUNG IN SUMMER AND HOT WATER IN WINTER.

I want to put up a range of Melon-pits to be heated in summer with dung, and in winter to keep bedding-plants in. Can I have a flue to exclude frost in winter, and the dung for bottom heat in summer? And are the pits best sunk or raised?—An Irish Subscriber.

[If you can depend upon a dry bottom naturally, or by drainage, then the pits will be best sunk for at least half their depth; if you cannot depend on that dryness it would be best to build them on the surface, and use hollow walls instead of solid ones. We have lately stated how such a pit should be heated altogether from a flue. If you contemplate dung for bottom heat in summer the flue had better go along the front; and then, in winter, instead of leaving the manure in, it will be best taken out, and a temporary stage for the plants put in that you can raise or sink at pleasure. Below that stage many things as Fuchsias, Dahlias, &c., might be kept in winter, whilst the young growing plants were on the stages.]

LILIPUTIAN DAHLIAS.

At page 49, line 10, your printer has made a mistake which please to correct. It should read 27 inches high, not 37 inches, as there would be no good proportions between height and circumference in good Celery culture.

Last autumn the new class of small-flowering or Pompon Dahlias were incidentally mentioned in The Journal of Horticulture, and as they are pets of mine (I suppose on the principle of "Little minds like little things"), and, as I believe, deserving of extensive culture, permit me to call attention to them, as I feel persuaded that when more generally known they will be appreciated and grown, and I do not despair of seeing ere long prizes being offered at our floricultural exhibitions for them in stands as other Dahlias are, and in pots, where they will look well and be admired for their dwarf habit and their free-blooming propensity. They are, many of them, good in outline and proportions, depth of petal, and have a good centre. For vase culture they are unsurpassable. For front rows of borders, or small beds, they fill a gap in the flower garden. For bouquets or cut flowers in drawing-room they are alike suited, and Mr. Summers (Spergula Summers), the manager of the Crystal Palace Nurseries, Sydenham (Messrs. Carter & Co.'s), is trying some experiments with them, which if successful will make us open our eyes and wonder. If it is true, I must not betray his secret at present, but the man who so successfully handled Spergula is not the man to sit down and fold his hands in despair at a little failure, should it be so. What should we say if in the early spring months we had Dahlias in full glorious bloom in our rooms and conservatories? Well, patience, and we shall see. Let some of the floral committees offer good prizes next season for the best twelve distinct varieties in eight-inch and eleven-inch pots in full bloom, and let them be judged by the most and best-shaped blooms on the respective plants, keeping the condition of the whole collection as to style of growth, &c., in view at the same time, and I feel persuaded that they would be the principal objects of interest at such exhibitions. They are also a lady's plant, being so very neat.

I have heard an objection started to them—viz., that with their dwarfness the flowers are too small. All I would reply to such objection is, Well, take some of the largest and coarsest kinds you can find, impregnate the Pompons, and raise a class to your own fancy. Imagine a plant 18 inches high, with a Disraeli, George Glenny, or old Duke of Wellington, blooms—surely, that would be very neat and graceful. The only two growers of them that I know in the trade are Messrs. E. G. Henderson, and Messrs. J. Carter & Co., either of which firms would select a collection for any one desirous of commencing their growth much better than could be done by a mere catalogue list. Subjoined is a list of a few good ones. I would suggest that parties ordering should specify the height they would like, as they vary from 18 inches to 40 inches; and if they are for vase, pot, or basket culture, or for small-designed flower gardens, or for front or medium edgings of flower-borders, and if they are required self-coloured or fancies, for they contain the brilliant and delicate tints of the larger kinds in miniature, more profuse in bloom and the size of a Ranunculus.

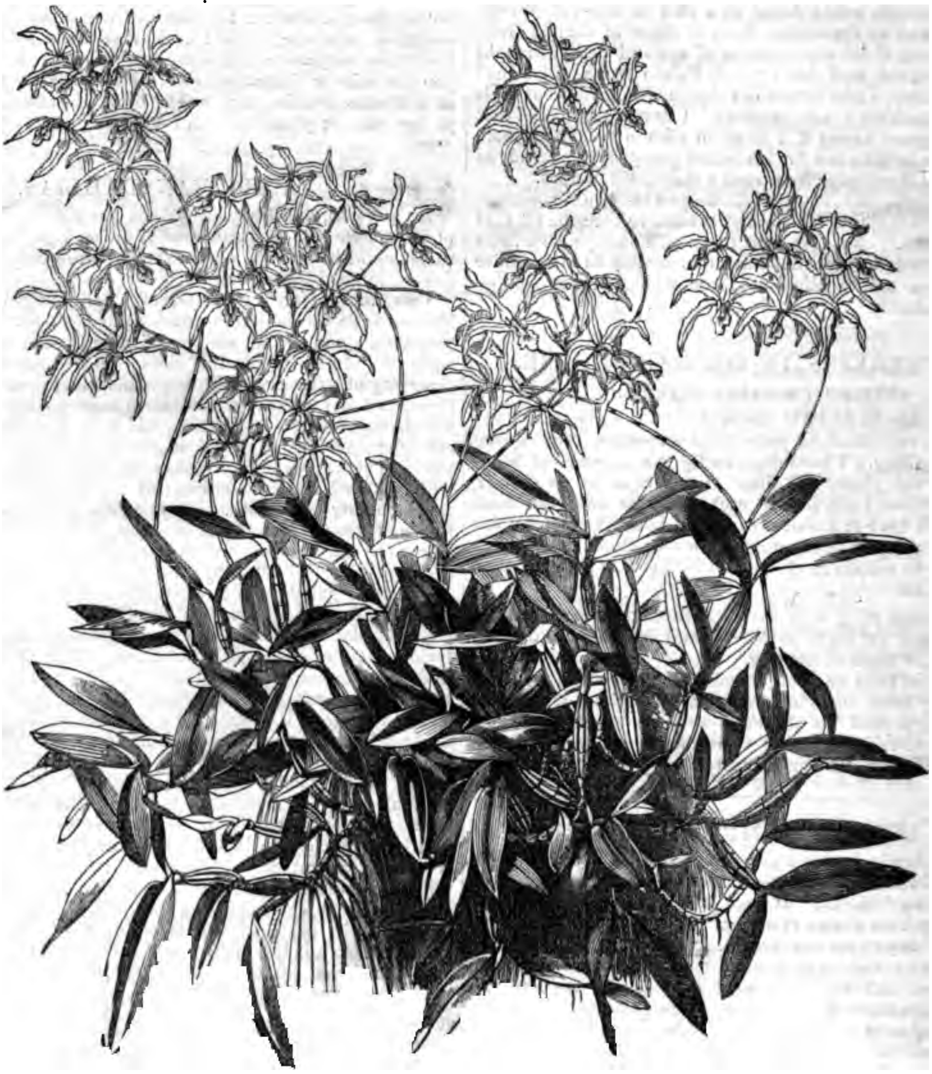
Little Elizabeth, rosy lilac tipped; Little Hélène, rosy lilac, tipped purple; Little Wilhelmine, dwarf white and primrose; Little Prince, red incurved; Little Arthur, yellow, red tip; Little Nagade, blush white, crimson edge; Little Pet, buff; Little Julius, carmine; Honeycomb, quilled purple; Dr. Webb, orange scarlet; Amorette, buff white; Crimson Beauty, crimson; Goldfinch, orange, tipped bronze; Little Beauty, red, tipped white; Little Mistress, purple self; Lady Jewel, white, striped carmine; Rosette, rosy blush; Child of Faith, white; Gold Pheasant, yellow, tipped red; Liliput Bouquet, blush.—NICK[illegible].

A FEW OF OUR BEST ORCHIDS.—No. 1.

LÆLIA SUPERBIENS (*Gorgeous Lælia*).

Lælia was a vestal virgin, according to Roman classical authority, and was adopted as a generic name as a tribute to the beauty and delicacy of the flowers. *Superbiens*, or gorgeous, applies to the rich crimson, and yellow, and pink that are mingled in the petals, lip, and sepals.

This, as well as its kindred genus Cattleya, were greatly enriched by the industry and zeal of the Royal Horticultural Society's collector, Mr. Hartweg, who gathered and sent over to the Society a great number of species, and amongst them the present. As it was forwarded in considerable quantity, it found its way into many collections. Mr. Skinner has also the merit of having introduced it very extensively.



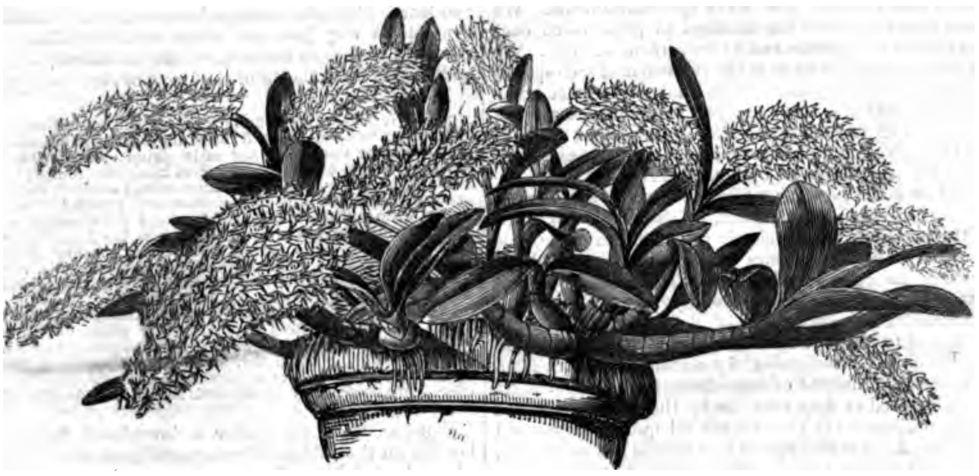
[illegible] Guatemalan [illegible] it is fo[illegible] wing out of th[illegible] vices of the rocks in the [illegible] ooler [illegible] atemala, chiefly in places which are [illegible] nelte[illegible] ness of the northern winds. In such [illegible] ulbs sometimes grow 22 inches high, and [illegible]

[illegible] immense size, however, is far from being common; and when the plants are not protected on the north side, they are very small, and have an imperfect, stunted appearance. In England the flower-stems have been about 6 feet [illegible] ength, and the pseudo-bulbs usually rise about a foot. [illegible] the reason why flowers have not been produced sooner, may be correctly assigned to the fact of the specimens which were first introduced having been subjected to a high temperature, with a close, moist atmosphere. These conditions being more favourable to luxuriant growth, would undoubtedly militate against the production of flowers. And it was not till the plants which have bloomed were treated in a contrary manner, that they displayed any appearance of flower. Cattleyas and Lælias should always be grown in a lower temperature than is required by East Indian genera; and, during their winter season, water should be carefully withheld, and no moisture allowed in the house that can be prevented.—(*Paxton's Magazine of Botany.*)

DENDROBIUM SPECIOSUM (*Showy Dendrobe*).

THE derivation of the name of this genus is misleading. *Dendron*, a tree, and *bio*, to live, intimate that the species embraced by it are strictly epiphytal. They are not so, and the species now under consideration is an example to the contrary.

It is a native of New South Wales, and is found as far south there as Port Jackson, where the night temperature is as low sometimes as 35°. When first introduced it was rarely bloomed effectively, but better information has enabled gardeners now to be more successful, and specimens were soon seen 5 feet in diameter, with nineteen or more spikes of bloom, each spike more than 2 feet long, and each comprising about one hundred of its pale yellow and sweet-scented flowers. Even thirty-five spikes have been borne by one plant, but they were little more than half the length we have specified.



It is best cultivated in a greenhouse throughout the year, with temperatures such as are suited to Pelargoniums, and the following is the mode of culture adopted by the cultivator of the largest specimen we have mentioned, and published some years since by a contemporary.

The plant was grown in an intermediate-house varying from 65° to 75° in summer, but at other seasons from 45° to 55°. In May, its season of rest, it was placed in a cold pit, exposed to the sun, and very little water given. In September, the commencement of its growth season, it was returned to the intermediate-house, and freely watered.

It blooms during February and March. If grown in a stove it is luxuriant, but does not produce flowers.

BROMBOROUGH POOL WORKS HORTICULTURAL SOCIETY.

IN THE COTTAGE GARDENER, No. 629, for October 16th of last year, appeared under this title an account of some results obtained with respect to the cultivation of the Potato. The Society offers prizes for the largest and best produce of Potatoes from surfaces of ground of 6 feet square, and the results obtained by weighing the produce from several pieces offered in competition, gave the data on which the published calculations were made. The following short statement continues the account for this present year:—

The average yield of our Potatoes this year has been greater than the last two years. Thus the produce (of all kinds) has been

In 1858............	12¼ tons per acre.	In 1860............	10¾ tons per acre.
In 1859............	10¼ „ „	In 1861............	11¾ „ „

While the proportion of small and diseased tubers though greater than in 1858 and 1859, has been much less than last year. The per-centage of good, serviceable tubers was—

In 1858..................	85¾ per cent.	In 1860..................	67¾ per cent.
In 1859..................	83 „	In 1861..................	74½ „

The average produce of the different species grown here this season is shown in the following table:—

Kind of Potato.	Produce (total) in tons per acre.		Produce per cent. of good tubers.
Lincoln Red	13.09	......	78
Californian Kemp	12.96	......	82½
Pink Eye	12.65	......	47
Flake................................	12.52	......	82½
Scotch Downs	11.43	......	86
Arrowsmith's Seedling	10.56	......	75¼
Kemp (various kinds)	10.46	......	75¾
Prussian Blue......................	10.15	......	69¾

Comparing these results with those obtained in past years, we find that the Lincoln Red, Kemp (called here Californian), Pink Eye, Fluke, and Arrowsmith's Seedling, keep the same relative order with respect to their total produce. This is the first year that the other two species (Scotch Down and Prussian Blue) have been grown here, and it is, therefore, hardly fair to draw any conclusion as to their cropping capabilities from one year's results. Otherwise the first column of the table probably represents fairly the proportionate total produce to be expected from each species in our ground.

The results as to the per-centage of good tubers differ so widely from those previously obtained, that it would not be safe to hazard an opinion as to the characteristics of the several species in this respect. It is evident that the variations in kind and quantity of manure used, time of planting, and amount of care bestowed upon the growing crop, influence our results at present more than the tendencies of the kinds of Potato grown.

The results as to the space required for the healthy growth of the Potato plant appear to corroborate the conclusions arrived at last year. Classifying the pieces offered in competition according to the space allowed by each cultivator for one plant, and calling those in which less than 200 square inches were so allowed, "small," those in which from 200 inches to 240 inches were allowed, "medium," and those in which more than 240 inches were allowed, "large," we obtain this table:—

Spaces allowed for each plant.	Average total yield in pounds from pieces of 6 feet square.	Average yield in pounds of good sound ubers.
"Small"—viz., less than 200 inches...	20.40	15.25
"Medium"—viz., 200 ins. to 240 ins.	21.17	17.22
"Large"—viz., above 240 inches......	21.84	16.82

It appears from this table that there is no advantage in allowing a space of more than 240 square inches for each Potato plant, as the small increase of total weight obtained from the "large" space pieces, appears to be due to the additional number of small immature tubers which have been formed.

It would add much to the interest and utility of these calculations, if similar results were obtained by other horticultural societies, or by holders of allotment gardens in other parts of the country. The publication of such results would do much to stimulate the holders of Potato allotments in their endeavours to secure first-rate crops, and would furnish them with information which could hardly fail to be very valuable.

The above report, furnished by Mr. Hatcher, was accompanied by a letter, from which the following are extracts:—

"I have not been able to make much of our results this year, as it is evident that we want now more systematic trials. We shall try next year to induce the allottees to plant (each one) two or three species of Potatoes and to treat them all alike. We may then get some good results as to the characters of each species of Potato—in power to resist disease—in tendency to start small tubers late in the season; and so in real productiveness, apart from the influence of variable cultivation. At present the differences due to cultivation quite overpower any differences which might exist in the several species of Potato grown.

"If the Editors could give our gardeners some information as to the best kinds of vegetables to grow, we should all feel much indebted to them. News travels slowly to us; for example, it is only this year that we have had James' Improved Carrot tried here. This species has far eclipsed all the Altringham and Orange Carrots, and will be largely grown next year without doubt. You also mentioned some new kind of Bean when here which we should be glad to try. We have all tried experiments on new species "highly recommended" by seedsmen; but it is so difficult to know what amount of dependance to place upon their statements (influenced as they must be by the quantity of seed the writer has to dispose of) that we are all quite disheartened about these trials. A list of really good new species of Peas, Beans, Carrots, Lettuce, &c., from an impartial observer would be a great boon to us; of course, some kinds very fit for high-class gardens are less adapted for cottagers where a large quantity of yield is at least as great a desideratum as beauty of form or delicacy of flavour in the produce. This may have had to do with many of our disappointments, so that we must not blame the seedsmen entirely for our mishaps.

"I find that we are (in our Potato yield) above the average of this part of the country; but we might learn facts from others, both as to species to be grown, and mode of cultivation to be adopted, which would greatly improve our work.

"We have tried this year the American mode of planting Potatoes, four together in a mound and training in four opposite directions, earthing over the stems as they grow up; but this year it has failed with us—I think through too much space having been allowed. The tubers were well grown, and the proportion of good quite up to the average; but the total yield from the ground occupied was small. It was, however, only a first trial and may be improved upon next year. A solitary trial this year of the plan of laying the stem underground constantly as it grows was a great failure. There were many small tubers more than there should have been, and many diseased. In one garden two rows of Flukes were planted side by side with two rows of Pink Eyes. The latter were far more diseased than the Flukes."—W. H. Hatcher, *Bromborough Pool Works, Birkenhead.*

NEW BOOK.

FORMATION OF THE FLOWER GARDEN.*

The diversities of taste to which this subject has led the last few years, and the utter disregard to all conventional rules which some have fallen into in the attempt to improve their grounds, has led the Messrs. Major to publish a set of designs in geometrical flower gardening, embracing several forms of beds, and each accompanied by a concise description of the class of situation it is adapted for, and also the size of the plot of ground it will occupy. This latter information is of the greatest importance, as lamentable [illegible] committed by crowding too much into a small [illegible] when a scale is given [illegible] if the [illegible]

beds in most of the figures is fanciful scroll-work, to which an imitation of foliage is occasionally attached with, however, very few acute points—one of the most difficult of all things to manage in planting; and the limb of the scroll is in no case less than 3 feet wide. Some of the designs exhibit more simple figures, and there is a very excellent way of dividing a circle into seventeen compartments worthy of general imitation. Most of the plans, of which there are twenty, are designs for figures or groups, described as suitable for plots of ground 84 yards long by 60 yards wide, down to suburban fronts of 25 yards square. In the various designs our own ideas would point out No. 6 as looking best when planted, the figures are all simple and not too much crowded. There are also two very good designs for flower gardens on gravel, but the author evidently objects to designs of this kind forming objects in front of the main windows of the residence. His observations, however, on the bedding system in general are very just, and we append the following paragraph from the preface to his book which, we believe, will be generally endorsed as being the opinion of most of our flower-garden friends. Messrs. Major say—

"One great objection to flower gardens laid out in the grouping or bedding system being placed in front of the house, is the dreary aspect they present during the winter and early spring months. To obviate this in some degree pots of plants of the most interesting foliage, as well as hardy flowering plants, such as Daphne mezereum, Jasminum nudiflorum, Rhododendron dauricum atro-virens, Skimmia japonica, Pyracantha, Erica carnea, ditto multiflora, ditto rigida, ought to be kept in readiness in the reserve garden for introducing thinly into the beds at the close of the blooming season. Also patches or masses of Crocuses, Snowdrops, Hepatica, Christmas Rose, Scilla, Ranunculus amplexicaulis, Alpine Auricula, Polyanthus, Double Primroses, Pulmonaria, Trillium grandiflorum, Winter Aconites, Early Tulips, with other early-flowering plants of a similar kind may be introduced. These would, in a great measure, keep up the interest in the garden, and afford some degree of pleasure until the season for putting out the bedding plants came round again. These bedding plants should be strong and healthy, and ready to plant out the moment the weather will permit, so as to produce a good display, and an immediate effect. We need hardly say the beds should be thoroughly clean and fresh to receive them."

Some other useful matter is introduced into the work, all bearing on the subject of ornamental gardening. Some patterns of garden edgings of terra cotta and ironwork are also given, but they are less to our liking than the designs for beds. The work concludes with a list of bedding plants, to which we expect many of our south-country readers would be making addition as well as weeding out sundry things; but every one thinks himself entitled to give an opinion on this matter, and the list given in the work may be as good as that of any other individual list, but there are some omissions. A list of herbaceous plants is also given separately, and much useful information may be gleaned from its pages, which are not extended to inconvenient length; and the concise character of the letterpress, the good execution of the plates, and the neat manner in which the book is got up, entitle it particularly to the attention of our lady friends, to whom it is addressed.

CAPACITY OF PEACHES TO ENDURE HEAT.

In planting a small Peach-house heated by a common flue, with Royal George and Noblesse Peaches, which of these two kinds will best bear the greater heat where the flue enters, and is much the hottest part?—Clericus.

[The Noblesse will bear the most of the two; but you had better equalise the heat a little by making the flue thicker next the furnace for a couple of yards, or even laying sand against it and over it for a short space.]

MEYENIA ERECTA CULTURE.

WINTERING YOUNG FUCHSIAS AND SOME STOVE PLANTS.

Should Meyenia erecta be pruned back? if so is this the proper time? A nice young plant has not yet flowered, but has made luxuriant growth this summer, and should it have a diminution of heat and moisture in the winter?

Should young Fuchsias (struck in August) potted in 60's, be kept growing now, or dried off like old plants?

Could a few hints be given respecting the winter management of the following stove plants:—Æschynanthus, Hibiscus rosa, Allamandas, and Dichorisandra tigrida?—Carolus.

[We would reduce the temperature and water, and not prune the Meyenia until we saw what it would do in spring, when the [illegible] moisture [illegible]

The young Fuchsias should be kept slowly growing if it is intended to make fine plants of them next season.

Æschynanthus to flower well in spring and summer should be kept cooler and drier in winter. Hibiscus will be warm enough at from 45° to 55°. Allamandas should rarely be below 60°, except the shrub one, which is as hardy as the Hibiscus. We do not know Dichorisandra tigrida. Thyrsiflora is the best; it generally blooms in winter in a temperature of from 55° to 70°, requires to be pruned back in spring, grown in a moist heat in summer, and to have more sun and air in autumn.]

THE ROYAL HORTICULTURAL GARDEN AT KENSINGTON.

It is certainly fortunate for the healthy management of our public institutions that they are all liable to an unfettered criticism. This privilege, when not abused by descending into personalities or factious opposition, is not only excusable but highly recommendable, the critised often receiving much benefit by the rebukes given them. On the other hand, it is always more pleasing to hear a good report of our doings than one of a contrary description; but censure, when merited, ought to be listened to and profited by accordingly. And the institution which forms the subject of this epistle has certainly no reason to complain if its actions do not meet the approbation of every one, since it has derived so much assistance from a source the public have been so much interested in.

The Royal Horticultural Society, with its chartered privileges and its long array of patrons, ought not to be any more exempt from public criticism than the doings of the Government; for in its capacity as a mercantile body it became bankrupt, or something very much like it, and though it has been allowed to resume business again by having received assistance from without, there is such a thing in trading affairs as a second suspension of business. Hoping, however, that this will not be the case with the newly-invigorated Society, a glance at its doings may be allowed, and its position and other features commented upon.

To those unacquainted with the new horticultural gardens at Kensington, it is proper to say that the site comprises somewhat about twenty acres of ground, slightly inclining one way, and in shape an oblong square. At one end of this is the new conservatory, a large, showy building; and along both sides are corridors, wide and spacious, the outer side being a plain wall, the garden front being a series of arches of Saracenic character; the twisted columns and enriched spandrels having more the features of that remarkable people than of the more classic works of Greece and Rome: of this, however, I leave others to give an opinion. Also over this corridor is a wide promenade, which I have no doubt, when finished, will be much used. These side corridors unite with the conservatory by a curved line towards it, and flight of steps ascend into it. The opposite end to that on which the conservatory is placed forms the entrance, and some buildings appropriated to that purpose, and others not yet complete occupy that end; but I believe the corridor and promenade are expected to be carried round the whole. This description of the outer boundary may therefore suffice by saying it is purely architectural, and is expected to be enriched by sculpture inserted in niches prepared for it, and some further embellishments, we are told, are not unlikely to be added hereafter.

Such is the boundary line of the new horticultural garden, and, as will be conceived, these corridors are seen from all parts of the grounds, being, in fact, the most imposing feature of the place. The ground itself, whatever may have been its original feature, is now carved into a number of terraces, slopes, and levels, with mathematical precision; none of these slopes, however, exceeding an elevation of 3 feet, and some of the panels are depressed about a foot or even less. A broad walk leads by the side of the corridors; and on the turf on the inner side are ornamental panels devoted to flowers and coloured materials, fully three-fourths of the space being of the latter description. The designs for this class of ornamental work are of a more simple character than that of some other panels in the centre, which are very elaborate but not suited for flowers higher than 8 inches or so. There are also four, or perhaps more compartments, composed entirely of coloured materials with lines of Box edging, small and neat, intervening between the colours. These compartments are fanciful representations of the four emblems of the four provinces comprising the British empire—the Rose for England, the Shamrock for Ireland, the Leek for Wales, and the Thistle for Scotland. The larger panels, comprising a mixture of flower-beds and ornamental work, have more scope for scroll work and colouring; Box-edging, however, being the boundary work for all; and certain portions of the work consist of a mass of low-kept Box to represent some portions required to be green.

Generally, I believe, all these panels are edged on the outer side joining the turf with stone kerbing. The colouring materials used seemed to be substances broken into the size of Beans, and consisted of a bright red brick, and a pale yellow or stone-coloured one, blue slates, coals, a white spar or spar gravel (one of the most useful of all), and glass of two or three tints, a rich purple being the most conspicuous. Besides these simple colours different tints were formed by mixtures of two particular ones, and I think a grey stone was also used; but the above description will enable a distant reader who has no chance of seeing the garden, to understand to a certain extent its appearance. The ornamental panels being, as before stated, composed of a few flower-beds of no remarkable shapes, and only of moderate size, few, if any, exceeding 4 feet in width, and surrounded and intersected by ornamental work of the coloured material as stated above, the space occupied by the flowering plants not being more, I should say, than one-fourth, and perhaps not one-sixth of the whole panel; the remainder being what I call the embroidery, or what is called in some other places, the polychrome-beds.

In addition to the panels above alluded to, large basins or fountains intended for water are formed, or are forming, to be fed by a glut of water precipitated from an orifice in front of the conservatory. These basins are highly-finished architectural objects, and being placed in juxtaposition with each other, and at a convenient distance from the other panels, will add materially to the general effect. Broad walks with steps, where wanted, to descend a slope intersecting the whole garden, and the remainder of the ground turf with conspicuous trees or shrubs—as Irish Yews, Junipers, Yuccas, clipped Box, and the like, occupying sites allotted them on the turf. Very few beds of shrubs, and nothing planted in the natural style, so common, and yet so pleasing in other places. Everything here is done by mechanical rule, and so far as I could judge by a hasty glance at the whole, the manipulation does the workmen great credit.

In describing the garden I ought to have said that a portion of the lower end adjoining the entrance is less ornamented with panels and waterworks than the other. A maze occupying one corner, and the other partly planted with common trees may be appropriated for games or some other purpose. A terrace wall separates this portion from the rest, which wall also is enriched by architectural features, which it is needless here to describe. The maze was being planted, and a wirework fence erected to make it complete at once, and to young people its tortuous windings will be, doubtless, sources of much amusement.

From the above outline of the garden it will be seen that a highly artificial enrichment pervades the whole, even the very turf itself is cut into shapes so mechanical as to become part and parcel of the whole. Slopes, levels, gentle inclines, and sharp-cut angles, rounded tops and vases, are nowhere to be found; and the whole being fresh and green, looked well in contrast with the broad walks and fanciful patterns delineated in the panelwork alluded to. Most of the trees seemed also to be doing well, and the whole reflected great credit on those having the management of the working department; but of the general effect produced by the design, as a whole, there is certainly much difference of opinion.

In the first place, may I ask is it right to call an enclosure containing only about fifty species and varieties of plants, the Royal Horticultural Garden? Even assuming there to be twice the number stated, which I really do not believe there is, do one hundred names of plants qualify a place to so high a sounding title? Assuredly foreigners must have a very imperfect notion of the extent of our horticultural matters, if they only visit the Royal Horticultural Garden at Kensington. Would not some name more indicative of the architectural and mathematical features of the place be more appropriate? I do not profess to have much knowledge of technical terms, but when the term "Royal" is used, I always expect something grand, numerous, and magnificent, and a national Horticultural Society ought certainly to cultivate more than fifty species of plants! I do not deny the fitness of the plants present for the purposes they are put to, but I certainly felt astonished at their meagre numbers.

Most cemeteries contain more; and I think some cottage gardens occupied by working men earning less than 20*s.* per week, could be found that contain a larger collection of plants.

I am sorry also to have to find fault with the more ornamental portion of the grounds—the polychrome or embroidery-beds. I am the more sorry to do this, as the objects intended to be represented are important ones; but though an ornamental object is in itself beautiful, when we are pleased with it, yet if that object be intended to represent anything in particular, its intention ought to be clearly seen and recognised. On the contrary, at Kensington it is difficult to distinguish the Welsh Leek from the Scotch Thistle, although they are on different panels—in fact, all attempts to imitate vegetable objects in coloured substances like those used, fall short of a child of six years old's attempts to carve the form of a man on wood. The child can imitate the head, trunk, and legs in a fashion that can be understood at a glance; but it requires more erudition than many possess to know which is Rose and which is Shamrock, and which is groundwork to both. It would be better to dispense with national emblems than mystify them in the way they are done. Not but that they may be done as well as can be done in such material, but they fall far short in effect of the great white horses cut out of the chalk hills in some places on the Great Western road. The colouring would have been equally as effective if it had merely taken forms having no definite representation. Most people admire the rich colouring and diversity of figures in the alhambra at the Crystal Palace; surely something gleaned from that or some other source would have looked equally effective, and exempted critics from the unpleasantness of finding fault with what everybody must think is imperfectly shown.

Of the desirability of copying such features as those brought into play at this garden into that of others of a private character there exists much difference of opinion. Most people admire it much at the first visit, and come away almost enchanted with it—their second visit is also pleasing; but repeat this many times, and the Garden is looked at with indifference—there is no change. Nature forms so unimportant a part of the picture, that she may be said to be almost set aside. Now, a thing of art ought to be exceedingly good indeed to bear repeated criticism, and yet be esteemed beautiful. A magnificent pile of building, as a cathedral, may be so, not less by its architectural beauty than by the associations it calls up; but will the fanciful work at Kensington Garden do this? and to look repeatedly on an object after all interest in it ceases is wearisome. To a certain extent this polychrome system of colouring groundwork has been carried out in several places, and heraldic and other emblems form very agreeable episodes when in conjunction with other things of a more natural description; but I do not think the plan of converting a lawn into a carpet of many colours, as done at Kensington, will receive general approbation—on the contrary, many regret its adoption there. But I by no means agree with this class; for though I would not advise its adoption to any great extent in any private place, its presence here is both excusable and (as a wide departure from the usual appearance such places possess) is very instructive, even if taken in a negative sense.

In conclusion, I disclaim all intention of acting with any discourtesy to those having the management of this great public place. The keeping of the garden, I need hardly repeat, is in excellent hands, and a place so highly artificial requires all the work attending it done to great nicety, and this is done. The turf in the middle of September was as green as it is generally met with in April, while most of similar places around London showed distressing consequences of the dry weather. The flower-beds were done to the nicety of a bouquet, and where new works were not going on everything wore the garb of neatness, indicating the assiduous care of a vigilant working staff; and, as the public are generally anxious to know how their institutions are managed, [illegible] hope some one will step forward and give his opinion how this meets their view; and whether the ideas that may be next put forth agree with those here given or not, they will be equally acceptable to the [illegible]

[illegible]

[illegible]

[illegible]

[illegible] garden should now [illegible] other vegetables should be [illegible] at the [illegible] the quarters [illegible] unsightly

but harbours slugs and insects injurious to gardeners. *Broccoli,* where it has grown very vigorously, and is required late in the spring, it is advisable to dig it up, and lay it in trenches in nearly a horizontal position, covering the roots and stem up to the leaves; this has the effect of checking its luxuriant growth, and protecting the hearts of the plants in severe weather. *Lettuce,* plantations for spring use to be frequently looked over in the morning, and all slugs to be destroyed; if they should be very plentiful, sprinkle lime over the whole of the ground, either early in the morning or late at night, when the weather is mild. Secure from frost any now ready for use. *Mushrooms,* the beds now coming into bearing to be carefully looked over twice a-week; if any very dry spots are observed on the beds, slightly sprinkle them; this will scarcely be necessary if dung is used to maintain the necessary temperature. *Potatoes,* the whole of the main crop should now be got up, and carefully stowed away.

FLOWER GARDEN.

Plant Hyacinths, early Tulips, Narcissi, &c., in the open ground, and continue to pot and glass them for forcing. Plant Anemones and Ranunculuses for early blooming; but the choice kinds for showing are not put in till February. Transplant Sweet Williams, Canterbury Bells, Wallflowers, &c., into borders. Planting the different varieties of Roses may now be proceeded with in earnest; the ground reqnires to be dug to the depth of 2 feet or more, and a liberal portion of rotten dung to be mixed with the soil; when planted to be firmed tightly at the neck of each stem, and at the same time fastened to a strong stake to secure them from being loosened by the wind. A spade to be thrust under the roots of Dahlias to check their growth. Roll and cleanse lawns from worm casts; clear lime water may be employed to destroy worms if too numerous. As tree leaves are always in request, either as a fermenting material or for leaf soil, they should at this season be carefully collected. If they are required only as a manure they may be stored away in any by-place, and left to decay.

FRUIT GARDEN.

The weather is now exceedingly favourable for planting, and it should, therefore, be proceeded with expeditiously. When large trees or shrubs are to be removed, they should be taken up with the greatest care, every root should be carefully preserved, more especially the small ones; this being a matter of greater importance than that of preserving an immense ball of earth to a few of the larger roots. Should a tree lose by accident many of its roots at the time of removal a part of the head should be pruned away, as the head and root should always bear some proportion to each other. After planting they should be carefully staked, so that the wind may not have sufficient power to loosen them. Fruit trees should now be carefully pruned and trimmed, not merely those on walls, but those also which rarely have common attention—the standards in the orchard. If the heads of these were kept well thinned out, that the sun and air could reach the whole of the branches, there would be much finer fruit, much cleaner and more healthy appearance, and the ground beneath them would be less injured. It is quite improper to allow the heads of fine trees to grow into thickets of small wood instead of strong healthy shoots. One scarcely passes through an old orchard that would not be served by thinning out one-half the trees, and one-half the branches of those that are left. Look over fruit stores frequently to see that all is keeping well, and remove any fruit that may show symptoms of decay, so as to prevent the mischief from spreading.

STOVE.

During the next three months the atmospheric heat and humidity should have especial attention, for any excess in the application of either at this period of the year will prove highly detrimental to their successful cultivation by causing a premature or unseasonable growth, which no after-care can thoroughly rectify. The thermometer for the majority of stove plants need not at any time of the day exceed 60°, with a fall of 8° or 10° during the night. A selection of the winter-flowering Begonias will at this period form an important feature in the decoration of this structure, they being plants of easy culture may be advantageously introduced for the decoration of the conservatory [illegible] being previously started into bloom in the stove.

GREENHOUSE AND CONSERVATORY.

[illegible] places Chrysanthemums will be the chief feature of [illegible] They are [illegible] impatient of a close and warm atmosphere; and if the house contain plants re- g such treatment, the Chrysanthemums should, as far as cable, be placed in the coolest part where air can be given on every favourable opportunity. See that they are well ed at the roots, and occasionally with liquid manure.

PITS AND FRAMES.

not already done, get straw shutters, or whatever else it be intended to use for coverings for those prepared and readiness for use without delay. Expose the stock here to air on every favourable opportunity, so as to check h and to get the wood firm, in which state the plants will s liable to suffer from the confinement which may soon cessary than if kept close and coddled with too much h and moisture. Very little water will be required at ot; but look over the stock every few days, withholding until it is absolutely necessary, and then only giving a ate soaking, which is the safest method of watering at eason. If green fly make its appearance on any of the ooded plants apply tobacco smoke, that this pest may be ated at once, or otherwise it will disfigure and ruin them. s and other plants subject to the attacks of mildew to be watched, and sulphur to be applied the moment the is perceived. Examine Auriculas, taking off dead leaves, ove all things seeing that the plants are well dried, and no drip from the frames. Where American and other are used for forcing, they should be taken up and potted t delay, placing them in a cold pit until they are l for forcing, or in a turf-pit where they can be protected eather.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

weather being fine, gave the final earthing-up to the for- t beds of *Celery*, placing ashes all round the plants to keep slugs from nibbling them. Celery will take no om being earthed-up now; though, if we can get hold of thing as a little rough stubble and leaves, we would rather t for the last earthing-up, as, if put on lightly, it will not hough 6 inches or 8 inches thick, and pressed a little firm op and sloping to the sides, it will send the rain past the and, to a great extent, when taken up as high as the top of nts will keep frost, if not of the severest kind, out. If very sprinkling of straw may just be laid on the leaves exposed. Celery is grown in beds, as most of ours is, this is more ry than when done in rows. Cleared away the leaves hubarb and Sea-kale to prepare it for being taken up and Have a little old hay in readiness to throw over some ts that are now protecting a bed of Dwarf Kidneys in an it if a sudden frost should come. Prepared an open ground for a few Peas, though we generally prefer for- plants in spring; and commenced heeling over Broccoli, highest greens as a security against the frost, looking uliflowers, Lettuces, Endive, &c., as mentioned last week. d for planting Shallots and Garlic, and weeded and Onions that had to be used for salads and stand the and got all roots under cover, and swept over Mush- ds, &c.

FRUIT GARDEN.

ed some Oaks in a group, of good size, taking out the l chalk subsoil, and filled in with the good surface earth, y may have depth as well as good surface soil to grow is respect considering that forest trees should be treated ferently from fruit trees; for, whilst in the one case the ject is ornament and timber, in the other case fruit e the object, and that is best promoted by comparative planting; at least, preventing if possible, the descent of s into cold ungenial soil, far beyond atmospheric influence, power of the sun to affect the condition of the roots or s they absorb. In planting fruit trees, and no season etter than just when the leaf begins to turn, this matter ng the roots to the surface should be a special considera- ollected a few leaves of trees, and will collect more, to slight cover on the Vine-border to keep the heat of ner from radiating away. Washed the glass, woodwork, c., of the early vinery; pruned, washed, and tied up the bundles, to be out of the way; and filled the house with iums from a cold pit, Verbenas, Heliotropes, and the tenderest things that might be injured from damp in a cold pit. Swept off all the leaves from an early Peach-house, and syringed it well with warm water; at about 160° shutting the house up. This will soften all dirt and help to settle eggs of insects, if there are any, and will wash trees and trellis the first opportunity; and, then paint the trees with flowers of sulphur and clay. The Vines were so painted after being well washed with soap and water, as some traces of thrips appeared before the Grapes were all cut. The looking after harvested fruit of hardy kinds is too much of a sinecure with us this season.

FLOWER GARDEN.

Houses much the same as last week. Took up yesterday a lot more *Geraniums*, to keep if possible as larger plants over the winter. Put them thickly, in the meantime, into our thatched Mushroom-shed, the half of which is now over, that we may take them out as we find time. Have dressed some Manglesi, cutting off the most of the shoots and nearly all the leaves, and cramming some thirty plants into an eight-inch pot, where they will remain until March or so. Many Scarlets will be so treated, but more of the stems left, but all leaves removed, a little water be given to the bottom of them, dry soil placed on the surface, and the pots or boxes stowed away under stages, &c. We find an old brick pit useful for this purpose. The plants are stripped of all their leaves and the soft points of the shoots, the ends are dipped in charcoal-dust and lime, the roots are packed in soil as thick pretty well as faggots, and a little water given just to moisten the roots and the soil about them, and then in a day or two 3 inches or 4 inches of dried soil and burnt earth are thrown over that, stems and all together, and a protection from frost and air in fine weather is all they require until the middle or end of March—when breaking buds all over they must be taken out and thinned. This plan will only apply to pretty strong growing Scarlet Geraniums, all the variegated ones and the weaker kinds will do better under a stage, or in a loft where there is less chance of damping. Of course all young plants of this season's striking must be kept in the light and growing all the winter. Placed with a spade a little earth round Dahlia stems, that a sudden frost might not injure the main buds of the roots. They are still in full bloom.—R. F.

TRADE LISTS RECEIVED.

List of Plants of the Fir Tribe Suitable for the Climate of Great Britain, Cultivated by Richard Smith, at St. John's, Worcester.—A very modest title for a publication that contains more information on the subject of Conifers than many books. It is a capital catalogue and admirably got up.

A Catalogue of Pansies and other Plants Cultivated by William Dean, Bradford Nursery, Shipley, Yorkshire.—In florists' flowers generally Mr. Dean is well known as a great proficient; but in Pansies, more particularly, he holds a high place among cultivators. His is the best catalogue of Pansies we have seen.

William Chater's List of Superb Double Hollyhocks and Pansies, Saffron Walden.—Some men grow specialities, and Mr. Chater's seems to be Hollyhocks, of which we have before us a list of his newest and best sorts.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

DIELYTRA SPECTABILIS IN WINTER (*Edith*).—To manage Dielytra in the open ground is only to let it alone there and let it have its own way. Ours stood last winter with hardly an inch of earth over the crown of the roots, and in April and May they were in full bloom, fine as ever, but they soon get too strong, and February is the best time to part them at the roots.

Aquarium and Fernery (*W. H. B.*).—We think you may contrive the fernery and aquarium nicely, and have pendulous Ferns, &c., depending from the roof. To give you ease and success in the matter we would recommend a double glass roof, and one of these at least to be Hartley's patent. Either a brick-cemented tank, or a wooden one, inch-and-a-half boards, would suit your purpose. The wood would be best if you intended half of the side to be glass, as stout squares some 27 ozs. to the foot could be let in with thick white lead and be waterproof. If particular on the animal part, you could divide the aquarium longitudinally in a similar way. It is quite impossible without seeing the place to enter into any details as to the construction.

Heating a Greenhouse (*A Subscriber near Manchester*).—Unless inquiries are sent early we cannot give answers in the first Number, as that is generally made up a short time before publishing. If there is no particular reason why the chimney should be at the end opposite the fireplace we would have the chimney at the same end as the furnace. We would also be satisfied with two flues instead of three, as it would draw so much better. Instead, too, of taking the flue along the back first, we would cross the end from the furnace, and take the flue along close to the front of stage, and then return it to the chimney. If strong heat is wanted, build the flue with brick on bed for 2 yards from furnace. Let the flue have a slight rise all round, and in turning have a curve instead of a square (⊂ L). Get strong tiles with receptacles for water for covering, and you will have moisture enough, and have heat enough for anything if the furnace is all right.

Culture of Rhododendron Edgworthi (*Clericus*).—There is little peculiar required for the Rhododendron Edgworthi, except giving it good drainage, plenty of water in summer, and, if the place is at all cold, protecting it in a cold pit or cool house in winter. It should have plenty of sun when growing and setting its buds. We feel for you being so unfortunate. Perhaps you had better tell us how you treated it.

Wintering Fuchsias (*L. F. F.*).—If the plants are large take a little off the points of the shoots, but do not cut back until they begin to break in spring. Let them stand in the pots. If the floor is damp the pots will need little water. In warm weather open the window to reduce the temperature as well as admit light. From 35° to 40° will do admirably. Prune to the requisite shape when the buds break; and when half an inch long shake off the old soil, repot, and water.

Amaryllis Warcsewinski.—Can any of our readers oblige us by any particulars of the history of this Amaryllis?

Seedling Geranium (*W. G.*).—The bloom was all shed, and no judgment could be formed of it.

Privet Hedge—Gleditschia triacanthus and horrida (*F. R. &c.*).—You do not say the size of the plants. A little rotten dung will cause the Privet to grow more freely. If well rooted we would let all alone, and nip in the straggling shoots in March, and again in June or July, to insure thickness and compactness. Gleditschia triacanthus, Three-thorned Honey-locust, fair-sized tree; bark greyish-colour, when old parts from the bole laterally; spines and shoots when young purplish-brown, spines often come from the trunk as well as young wood; spines simple or trifid; leaflets linear, oblong; pinnated foliage; legumes flattish, broad, many-seeded, crooked, and ten times as long as broad, &c. Triacanthus horrida is a synonyme of T. sinensis. The spines are stronger than the one above, simple on the branches, grouped and branched in the stems. Leaves bi-pinnate, deciduous; leaflets elliptic, notched on the edges, smooth, shining, and much larger than any other sorts.

Scale on a Gardenia (*Rector*).—The plant is covered with brown scale to a lamentable extent. You cannot do better than wash it well with soap and water. If that is too much trouble immerse the top, or syringe, or sponge it with glue water stiff enough to make the fingers adhere together, and then place the plant for three or four days in the shade. Then wash well, or syringe freely with water at 100°. Much of the glue will fall off when the plant is well shaken before you wash. After Christmas set the plant in a sweetly fermenting hotbed, keep the pot on the surface, and the fumes will, if confined about the plant, soon settle any scale left.

Wintering Calceolaria, Gazania, and Picotee (*L. C.*).—Your three-light frame, 24 inches high at back and 18 inches at front, is just the place for storing away Calceolaria cuttings, which may be put in about 2 inches apart each way in a bed of ordinary garden mould and road sand, the proportion of the latter being quite one-third. Gazanias will not bear a month's confinement so well as Calceolarias, if we should have continued severe weather for that time, that it would be advisable to have a few plants in pots or pans as well as planted, in order to be able to remove them into a dwelling-house or some other dry place, and be sure to have a pan of Calceolaria amplexicaulis to remove in the same way. Picotees and all shrubby Calceolarias will do very well in such a place. We have several thousand Calceolaria cuttings in a cold pit, with only wooden shutters to cover them with in severe weather—no lights, and yet we lose very few. In severe winters like the last we have added a few laurel boughs over the shutters as well, but in a general way they have no further protection. Cuttings of Calceolarias will do up to the middle or even to the end of November, but October is better. If your Picotees are already in pots let them keep so; but if attached to the plants take them up, and plant them in the bed. Gazanias will most likely be in cutting-pots, and may remain so until February, when they may be repotted, placed in heat, and furnish abundance of spring cuttings. And if old plants be taken up they had better be cut back, not all the shoots stopped, and, being potted, kept for a like purpose. They will endure some frost, but not so much damp and confined air as the Calceolaria.

Weigela rosea Pruning (*Idem*).—If your plant is against a wall it ought to be treated the same as a Peach, the shoots laid in during summer, and useless ones cut away; but as an open standard or bush but little cutting is wanted except to check any unruly growth. The same remark applies to potted plants for forcing. We have the plant in all capacities, and only cut those against a wall, which bloom abundantly; and unless the shoots be very long and coarse we would not cut them back. It would be better to cut such loose ones entirely away, and train in those of moderate growth, rather than shorten any. But the plant is very accommodating, and generally flowers well under any treatment.

Heating Hot Water by Gas (*E. C.*).—If you will buy "Greenhouses for the Many," which you can h[illegible] stamps, [illegible] you [illegible] find ful[illegible] particulars

Maurantha (*H. B.*).—There is no such genus, and the specific name you intend we cannot decipher.

Sowing Spergula pilifera (*Edith*).—Spergula pilifera to be sown in April. The smallest packet of it on sale will do more than you require. If your soil is stiff clay it will do capitally; if it is not, have nothing to do with that kind of Spergula, but try one of the British species.

Transplanting Evergreens (*A. M. S.*).—No time is so good as the end of October and very early in November.

Heating Greenhouse (*J. B. P.*).—We think that Riddell's patent boiler will answer placed as you state.

The Old Yellow Rose (*A Well-wisher*).—It is the old yellow Rose which no art can bloom where the soil does not suit it, and where it does suit it no hardship can keep it from blooming splendidly. It is of the nature of a Briar, and common country folks can hardly get it from budding. But if you will do as we once did, you will not only save every bud, but run the chance of blooming this old favourite as freely as the newer race. Take young healthy plants of the Dog Rose, and bud them close to the ground with buds of the Persian yellow Rose, which is also a Briar, but will take well on the hedge Dog Rose, and next year, or that same autumn, bud the old yellow Rose also low down on the Persian, and it will grow that way much better than on its own roots; but our plants done that way passed to other hands, and we heard no more of them, but we recommend the plan strongly.

Prize Gooseberry Trees (*C. H.*).—Any of the nurserymen who advertise in our Journal can supply them.

Apple Trees for a Small Garden (*G. H. L.*).—We presume you want dessert sorts, and therefore recommend you Kerry Pippin, Cox's Orange Pippin, and Golden Russet. There are no particular directions required in planting them further than do not plant them too deep, and do not manure them too richly, provided your soil is at all good.

Gooseberry and Currant Buds Destroyed by Birds (*D.*).—Your case is unfortunately only one of many such, and we fear you have already exhausted our list of preventives; and as you say the birds have already begun this depredation you must be a greater sufferer than the generality of growers in other districts. In our own case our Pear trees suffer very much during the winter, some good standard trees being much deformed in consequence. But our Currants and Gooseberries are all picked out at one particular time (the early part of February generally), and the evil seems to be done in spite of vigilant watching at the time. In Kent, where large quantities of Gooseberries and Currants are grown for the London market, a man is sent round with a gun at the time the evil is expected, and continuing this for about a week the evil is in some degree lessened. But the damage to Gooseberries is not confined to the picking out of the buds; but after the trees are in bloom the mischievous imps of the feathered tribe visit the trees again and bite the flower part off, severing it generally across the small embryo fruit. This mischief is often done in such a wholesale manner as to completely or nearly to destroy a crop. Waging war against the birds would be more determinedly carried on were it not by-and-by caterpillars make their appearance, and these mischievous depredators become useful auxiliaries. When the picking of the buds only commences in February it is best not to put up any scarecrows, threads of cotton, dustings of lime or other preventive till that time, and they will not get accustomed to its non-dangerous property until the buds be safe. A friend of ours in Herts used to commence tying up the branches of his young Currant and Gooseberry trees into a close bundle like a small faggot, and let them continue this way until the buds were expanded; and the trees by being accustomed to be tied up year after year in such a way did not present so much resistance as might be expected, and by exercising a diligent look-out at the time he generally saved them. Perhaps some correspondent will kindly furnish us with a better remedy for this evil, which has certainly grown to an alarming length in the last twenty years—many growers in Kent having ceased growing all Gooseberries but a small rough yellow one, which is very full of prickles, and less likely to be infested by birds than the other kinds. But it is not entirely a preventive, for where no other kind is grown they attack this one; that some cheap, easy, and efficient remedy for an evil, which, if increasing at the rate it has latterly done, will be a national misfortune, will be a boon to the horticultural world.

Fruit Trees for Wales (*A Small Farmer*).—The following will all do as standards in the neighbourhood of Dolgelly. Apples.—2 Devonshire Quarrenden, 2 Kerry Pippin, 2 Golden Russet, 2 Nonesuch, 2 Manx Codlin, and 2 Northern Greening. Pears.—2 Williams' Bon Chrêtien, 2 Louise Bonne of Jersey, 2 Thompsons, 2 Marie Louise, 2 Knight's Monarch, 2 Josephine de Malines. Plums.—1 Early Orleans, 1 Victoria, 1 Prince of Wales. Cherries.—1 Mayduke, 1 Bigarreau, 1 Kentish. The following will do for the walls:—Pears.—1 Marie Louise, 1 Winter Nelis. Plums.—1 Green Gage, 1 Coe's Golden Drop. Cherries.—1 Black Tartarian, 1 Elton.

Calceolaria Culture (*A Young Beginner*).—Although the Calceolaria will bear almost any amount of cold that falls short of freezing, it is perhaps one of the most impatient of changes of any plant we have; and the highly cultivated varieties in the herbaceous way are certainly so very delicate and liable to many mishaps, that it is not every cultivator that succeeds with them. A temperature not exceeding 40° suits them very well in the dark winter months, only they must have all the light they can, and be kept free from cold draughts, and as the pots fill with roots repot them. The compost you mention—peat, leaf mould, and yellow loam, ought to grow them well. But one of the most hurtful things to them is spring water partaking of chalk or lime, this is almost death to the Calceolaria. Use, therefore, only rain water; and as the spring advances give them more room, still keeping them in such a position as to be free from cold draughts. A cold frame will do very well up to the time of running up to flower, after which they may be set in a greenhouse; but when there be sure not to place them in the line of the ventilating openings—rather let the Calceolaria be below that, and with an occasional dose of liquid manure not too strong, we have no doubt but you will be rewarded with a good display. A partial shading, if the weather is very hot before coming into flower, will be beneficial, and when they are in flower this must of course be continued.

Mushrooms Grown by the French Plan (*C. M.*).—Unfortunately, we are not well enough acquainted with the details of this plan to speak with anything like confidence on its general applicability to cases like yours, as the Mushroom is somewhat capricious in its way, and possibly may refuse to grow the next time it be tried on the new-fashioned plan, for one or two conditions are at all times necessary to insure success, the first being good spawn, and secondly a good medium and uniform condition of the material in which they are grown in, and whether the situation be on the ground, on a shelf, or anywhere else, success in a general way may be predicted. But you will see an article by Mr. Robson on Mushroom growing, which will, perhaps, meet your case.

Wintering Bedding Plants in a Vinery (*A Lady*).—You and the gardener may use the vinery for the bedding plants. We fill every such place as soon as the fruit is cut and the Vines have been pruned. The bedding plants will keep well at from 38° to 45°, say 40°; and the Vines will not start an hour before their time if you do not go higher than that. When you begin to force, the hardiest plants should be taken out—say into the second house, and the hardiest there be sheltered out of doors somewhere else. Small places, pits, houses, where Vines, Peaches, Figs, &c., are grown and fire heat is used, we cram with plants all winter. Peach trees, however, when at rest should not be above 40° with fire heat, but that would be high enough for all bedding plants.

Names of Plants (*S. Ireland*).—1, Hemionitis palmata; 2, Gymnogramma rufa; 3, Davallia pentaphylla; 4, Blechnum intermedium. (*R. P. S.*).—Tournefortia heliotropoides, a frame plant, sometimes surviving in mild winter out of doors, in sheltered places, but not to be thus trusted.

FLOWER SHOWS FOR 1861.

November 6th and 7th. Royal Horticultural Society. (Fruit and Chrysanthemums.) *Garden Superintendent*, G. Eyles.

November 12th and 13th. Stoke Newington Chrysanthemum Society. *Sec.*, W. T. Howe.

November 14th and 15th. Crystal Palace. (Chrysanthemum Show.) *Sec.*, W. Houghton.

N.B.—*Secretaries of Societies intending to advertise in our columns will oblige us by sending an early intimation of their exhibition days.*

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CRYSTAL PALACE POULTRY SHOW.

Poultry events thicken as usual at this season of the year. We have scarcely reminded our readers that the entries for Birmingham are about to close, when we are made aware by our memoranda that it is our duty to do the same for the Crystal Palace. The Winter Show last year was such a decided success, and the influx of company so great, that it is decided again to hold it during the London Cattle Show. We do not wonder that our country friends avail themselves of the opportunity of a trip out of London to get a breath of fresh air, and that for a time they are glad to exchange the close atmosphere and more than crowded stalls of Baker Street for the luxury of elbow room and an open space at Sydenham. If we add to this the varied attractions of the place, we think we are justified in expecting that this year there will be a still larger attendance.

It has, however, fresh claims on amateurs, inasmuch as Mr. Houghton, the indefatigable Secretary, has made some alterations in the prize sheet. They have been suggested to him by exhibitors, and he has at once adopted them. The first will be approved by all. It is the addition of another prize to those previously given to Game Bantams. This is such a growing class, both in numbers and popularity, that the increase was not only called for here, but will have to be adopted everywhere.

A new class is added to the Pigeon list, and there is a special sweepstakes for Game Cocks. Many entries are expected in this last, as there is not one at Birmingham. We have learned to see the Crystal Palace Show as part of the winter exhibitions. The Smithfield week makes every one talk of stock. The countryman returns in December the visit the cockney paid him in August. The merits of fat beasts, the weight of swedes per acre or of a single mangold root, the experiments tried in fattening—all have their share of attention, and furnish conversation in houses where such topics are seldom heard at other times. Although the cockney speaks very guardedly when he sets the weight of a bullock, and is content to give his opinion on the merits of a sheep without handling, lest awkwardness in the operation should betray ignorance, yet when it comes to poultry many are oracles, and can discourse right learnedly on the various points and merits of the birds. Here the countrymen are at fault. It is unfortunately true that to most of them a fowl is a fowl. The cockney can also give an opinion about roots. He can see whether turnips and mangold are symmetrical. He can judge of their weight, and he can detect if holes and inequalities are artistically filled up with clay. We will, therefore, hope cocknies will support the Metropolitan Poultry Show, for such that held at the Crystal Palace must be considered. London affords no place suitable for such an exhibition, and its inhabitants should be thankful not only for the treat itself, but for the temptation it affords them of leaving the smoke for an hour or two, of refreshing the body and improving the mind while they are indulging a hobby which shows its utility more every day.

WHO BOUGHT MY PEN OF FOWLS?

At the last Crystal Palace Show for chickens I entered a pen of Partridge Cochins, placing the price of £21 upon them, which I thought would have prevented them being claimed. They took the first prize, and, unfortunately for me, were purchased from the Secretary, who in due time informed me of the sale. I afterwards wrote to Mr. Houghton, asking to be informed who the purchaser was. He very politely answered my note, but said he had been requested to keep the name a secret. He promised, however, to write to the party, and ask permission to inform me. I have since received a second note, saying he was on no account to divulge the name of the buyer.

Since the Crystal Palace Exhibition these same birds have been shown three or four times, and entered as bred by the party now exhibiting them.

There are many reasons why this unfair practice should be disallowed; but to myself and other breeders, who have taken so much pains to improve this very beautiful and useful breed, the one great objection is the possibility of buying back under a false representation the same strain for the purpose of breeding, and, as you well know, so injuring your whole produce for at least one season.

Would you please give me your opinion as to my being able to insist upon Mr. Houghton giving up the name of the purchaser, as any other agent selling on commission any article would be obliged to do if required? I doubt not, from your disinterested position, and the opinion entertained of you by all poultry fanciers, you will be able to obtain for me the information I require in a more satisfactory manner than I have myself.—Edgar Musgrove, *Liverpool*.

[The simple question is—if any one puts a price upon his pen of fowls at a poultry exhibition, and, being sold at that price, he obtains the money, has he any right to be told who bought them? We think he has not, any more than he would be entitled to demand the name of the purchaser of his cattle at a fair. He might refuse to sell unless the purchaser's name was previously imparted; but having sold and received the money he has no right to the information afterwards.

It is quite another circumstance the purchaser exhibiting the birds as bred by himself. This is an untruth that might cause the injury Mr. Musgrove points out, and we should have no hesitation, if the case were our own, in stating publicly that the birds exhibited by Mr. A. Z. were not bred by him, but by ourselves. However, we are not aware that it is usual to state who bred the birds exhibited; and the mere fact of A. Z. exhibiting birds does not prove that he claims to have bred them.—Eds. J. of H.]

BRONCHITIS IN FOWLS.

I shall thank you to inform me the best treatment for a Dorking cock about eighteen months old. He has evidently been attacked with bronchitis and fever. The treatment I have given him is as follows:—On separating him from the hens which are kept in a caged yard, I had him dosed with castor oil daily for a week, and externally rubbed his throat with spirits of turpentine, which relieved his breathing. His appetite never failed, but I reduced him from oats to boiled rice, sopped bread, and meal in water. Gave him plenty of water, occasionally putting a small piece of iron or nail into the water as he was and is still moulting. I also applied myrrh and borax to the mouth; and although the bird is better he never crows, and formerly he could be heard a quarter of a mile off, he was so fine and strong a bird.—A. M. R.

[Your treatment is quite correct so far as the castor oil is concerned. The bird would have done better without the rice. The oil must be continued as may be required, not less often than three times per week. Give twice every day stale bread steeped in strong ale, and rub the throat with strong camphor ointment. Never feed on rice.]

Two Prizes for Cochin-China Chickens at the Birmingham Show.—It is proposed to have separate sweepstakes, with first and second prizes, for Buff, Partridge, and White varieties. Subscription one guinea, entries to close Nov. 20th. Further information will be given by Mr. C. Felton, Erdington.

COLLINGHAM POULTRY SHOW.

THIS flourishing Show came off with its usual amount of success during the past week. The poultry, although not many above 100 pens in number, included some of the best birds in the kingdom. Several of the young birds are destined to hold their own in the large shows to which they will be forwarded.

The *Dorkings* of Mr. Dolby are already known as winners at all the great shows. The Silver Grey chickens he exhibited at Collingham are extraordinary for their size and colour.

Situated in the midst of numerous Game breeders, the character of the fowls shown in that variety was, as might be expected, quite first-rate. We were much pleased with Mr. Swift's Black Reds. The Brown Red *Game Bantams* of the same exhibitor were very good; and the Single Game Bantam cock of Mr. Camm, a Black Red, was one of the smartest and most perfect birds that have been exhibited for a long time.

Mr. Dolby's Toulouse *Geese* were especially heavy, and the prize Cambridge *Turkeys* of Mr. Smith were truly magnificent.

In *Pigeons* there was a good display of over 80 pens, including many really first-rate specimens. In Powters and Carriers, however, the Show was poor, the best pen in each class being disqualified, from containing a deformed bird. In the Short-faced Tumblers there was an unusually good collection. We may especially indicate a good pair of Yellow Balds of Mr. Hives, and the prize pens of Messrs. Oates and J. Percival. Barbs were a truly good class. Mr. Jones' second-prize pen contained the best pair of Turn-crowned we have seen, the cock being the broadest-skulled bird that ever came under our notice. The class of Owls included a very good pair of small whites, and a pair of imported blacks of the same character, but the presence of some white feathers in the hen prevented their being more than highly commended. The Trumpeters were good—Mr. Oates holding his own with his well-known whites. The Fantails were an extraordinarily good class, there being at least seven or eight pens deserving of prizes. The extra variety class was well filled, the prizes going to Magpies, Priests, Runts, and Frillbacks.

The whole of the birds were on their way to their respective owners by the train leaving at eight in the evening of the day on which the Show closed.

The following is the prize list:—

SPANISH.—First and Third, Lord E. Hill. Second, J. W. George, Beeston Padge, Notts. Highly Commended, T. Wood, Boythorpe House; J. Sharp.

DORKING (any colour).—First and Second, W. Dolby, Syston Old Hall. Highly Commended, J. Camm, Farnsfield; Lord E. Hill. *Chickens.*—First, and Second, W. Dolby. Highly Commended, J. Smith; W. Spafford, Oxton.

COCHIN-CHINA (Cinnamon and Buff).—First, P. W. Browne, Bull Bridge Crick. Second and Third, J. Staley.

COCHIN-CHINA (any colour).—First, W. Dolby. Second and Third, J. Staley.

GAME (Black-breasted and other Reds).—First, R. Swift, Southwell. Second, J. Staniland. Commended, J. Bradwell, Southwell; J. Wilders, near Grantham. *Chickens.*—First, R. Swift Second, G. Blyton, Swinderby. Highly Commended, J. Staniland. Commended, W. Marshall, South Collingham; H. Mantel, Collingham.

GAME (Duckwing and other Greys and Blues).—First, R. Swift. Second, J. Bradwell. *Chickens.*—First R. Swift. Second, G. Staley.

GAME (White and Pile),—First and Second, J. Camm. Commended, J. Wilders. *Chickens.*—First, J. Wilders. Second, J. Camm.

HAMBURGHS (Gold or Silver-spangled).—First, J. Key, Farnsfield. Second, J. Camm. Third, T. Drabble, Winkbourne.

HAMBURGHS (Golden-pencilled).—First, W. Weightman, Newark. Second, S. Cliffe, Spring Gardens, Grantham.

HAMBURGHS (Silver-pencilled).—First and Second, W. Spafford, Oxton.

POLANDS.—Prize, Rev. S. R. Hole. Commended, Miss Staley.

BARN-DOOR FOWLS.—First and Second, W. Wright, Collingham. Third, [illegible] Staley.

GOLD OR SILVER-LACED.—Prize, J. Bradwell.

BANTAMS (Black).—First, J. Bradwell. Second, J. Staley. Highly Commended, Rev. S. R. Hole.

BANTAMS (Game).—First, R. Swift. Second, R. Hawkesley. Highly Commended, J. Camm.

BANTAMS (Any other Variety).—Prize, Miss Staley.

DUCKS (White Aylesbury).—First and Second, W. Dolby.

DUCKS (Rouen).—First, Lord E. Hill. Second, R. Hawkesley, Southwell. Highly Commended, J. Bradwell.

DUCKS (Any other Variety).—First, R. J. Cooper, Colli[illegible]ham. [illegible] E. Hill. Highly Commended [illegible]

GEESE. Prize W. Dolby.

TURKEYS (Black Norfolk [illegible]

TURKEYS (Any other Variety).—F[illegible] Smith

GAME COCKS (any colour).—First, [illegible]

[illegible] Highly Commended [illegible]

GAME BANTAM COCKS (any colour).—First, J. Camm. Second, R. Hawkesley. Highly Commended, R. Swift; J. Camm.

PIGEONS.—*Carriers.*—First and Second, A. L. Silvester, 54, St. Paul's Square, Birmingham. Highly Commended, H. Child. *Powters.*—First, H. Simpson, Newark. Second, P. H. Jones. Highly Commended, H. Gurdy. *Almond Tumblers.*—First and Second, A. L. Silvester. Commended, J. Percival; H. Child. *Short-faced Mottles.*—First, Mr. Oates, Besthorpe. Second, J. W. Edge. Highly Commended, H. Yardley. *Short-faced Balds and Beards.*—First, T. Hives, Cotgrave (Balds). Second, J. Percival. Commended, W. Child; T. Hives. *Short-faced Tumblers* (Any other Variety).—First, J. Percival (Red). Second, Mrs. Oates (Black). Commended, P. H. Jones. *Barbs.*—First and Second, P. H. Jones. Highly Commended, A. L. Silvester. *Jacobins.*—First, T. Ellrington, Woodmansey. Second, W. H. C. Oates (Red). Highly Commended, T. Ellrington. *Owls.*—First, J. Percival. Second, R. Swift. Very Highly Commended, Mrs. Domenichetti, Besthorpe. *Trumpeters.*—First and Second, W. H. C. Oates. Highly Commended, R. Swift; J. C. Brierley. *Turbits*—First, E. A. Hargrove. Second, W. H. C. Oates. Highly Commended, J. Percival; H. Child. *Fantails.*—First, T. Ellrington. Second, F. Else, Westbourne Grove, Bayswater. Highly Commended. H. Yardley. *Nuns.*—First, J. C. Brierley. Second, J. W. Edge. Commended, F. Else.

ANY OTHER VARIETY.—First, J. C. Brierley (Magpies). Second, H. Child. Third, R. Swift (Priests). Fourth, E. A. Hargrove. Commended, J. Percival (Starlings).

The Judges were Mr. Challoner for Poultry, and Mr. Tegetmeier for Pigeons.

DISEASED SWAN.

SINCE moulting one of my Swans has become very thin. The new feathers do not grow, so that it is partially naked; it scarcely goes into the water, and there appears to be a great deal of irritation about its whole body, which it is almost constantly pecking and working with its bill. On the under side of the beak there is a swelling half the size of a walnut. It has been in this sick state a fortnight. Previously to this it kept in the orchard, and fed largely, if not entirely, on apples.—A SUBSCRIBER.

[There is unquestionably much irritation about your Swan, and, if it continues to lose flesh, it will die. The fevered state of body prevents the healthy formation of feathers, the stubs dry up in the skin, and hence the constant pecking. All you can do is to confine the bird, and to feed on oatmeal mixed with a few whole oats. The way to induce the the bird to feed is, to put a large thick sod of grass in a deep vessel, to cover it partially with gravel, to put the meal and oats on the top of this; and then to fill with water, which should be carefully poured in, and remain clear that the Swan may see the grass at the bottom.]

UNITING BEES.

I AM glad to see the subject of uniting bees, referred to in your Journal, October 22nd, page 78, by "A RENFREWSHIRE BEE-KEEPER," and I do hope he will be obliging enough to fulfil his promise by referring to the subject more fully at a future time, in hopes that there may be some more convenient and easy way made known than the fumigating and driving system which has been much tried here (north of Cheshire), during the last few years, but is now quite abandoned for the old brimstone-pit, except in my own case. I never sacrificed yet a stock in that way, but am sorry to say I have many times caused a lamentable loss of life in fumigating, which plan I have always followed with the mouse-skin byssus and puff-ball; but with the greatest care and attention there has been scarcely a year since I began bee-keeping seventeen years ago, that I have not fumigated from two to five hives with varied success. Some have been done with scarcely any loss, but in almost every year I have had one or two overdone, and great part of the bees never recovered. Many that were fumigated and united perfectly well, were not so strong and numerous in the spring as I expected, so that I fear I have not made so much profit in bee-keeping as some of my neighbours who have made use of the abominable brimstone-pit.

I tried the driving plan six years ago, but with no success. Two years ago I determined to give it a good trial, which I did on three hives. After turning the full hive over and putting the empty one on the top, and making them fit quite even and secure where they met, I then set a man and boy to rap them, and after examining them at times, for an hour there were no signs of their going up in any quantity: therefore, I put on a bee-dress and gloves, turned up the hive—there was scarcely a handful of bees up, which were soon on the wing, then put the empty hive where the full one stood, then unscrewed the board on the top of the full one, and took the bars with the combs out, and brushed the [illegible] returned to the empty hive, and in the evening put them in the usual way to the stock I intended and all went on well.

The other hive I did in the same way, though I must confess it was an awkward job, as there were a good number of bees lost by getting so smeared in the honey, and many could not fly for a length of time, and if the weather had changed to rain the loss would have been very great, but the day proved fine and hot, and nearly all got safe to the hive.

The following day I tried the other with the same results, and after rapping away for an hour and a quarter, and disturbing the whole neighbourhood, I was obliged to give it up and cut them out as in the other two.

I may observe, that all my hives are square bar-hives; some on the late worthy Mr. Payne's system, straw-sided and wood tops; some wood sides with flat straw tops, all the same size, so that they are quite convenient for either fumigating or driving.

I have been a regular observer of the writings on bees in your Journal since its commencement. I work principally on the depriving-system, but generally have some stocks that swarm. I have this season commenced using Mr. Tegetmeier's newly invented frame-bar hives, which I think will be very convenient for uniting, by putting the two to be united during the summer next to each other, and in the autumn put the one I wish to deprive under the one for keeping; then open part of the sides, puff a little smoke into them, and if the bees commence fighting I shall then slip a piece of perforated zinc between them, then raise the top one with a one-inch-square frame of wood the size of the boxes, cut an opening out of the frame for them to work through for two or three weeks, then remove the one-inch frame and zinc, and see if they will unite in that way.—H. Hood, *near Knutsford.*

THE PROFIT OF BEE-KEEPING.

As you have copied from the *Mark Lane Express* a new edition of an old story, I now send you the original version, which is taken from the preface to the first edition of "The Bee-keeper's Guide," by the late Mr. Payne.—A Devonshire Bee-keeper.

A good old French Bishop in paying his annual visit to his clergy, was very much affected by the representations they made of their extreme poverty, which, indeed, the appearance of their houses and families corroborated. Whilst he was deploring the state of things which had reduced them to this sad condition, he arrived at the house of a curate, who, living amongst a poorer set of parishioners than any he had yet visited, would, he feared, be in still more woful plight than the others. Contrary, however to his expectations, he found appearances very much improved, everything about the house wore the aspect of comfort and plenty. The good Bishop was amazed. "How is this, my friend?" said he, "you are the first man that I have met with a cheerful face and a plentiful board. Have you any income independent of your cure?" "Yes, sir," said the clergyman, "I have; my family would starve on the pittance I receive from the poor people that I instruct. Come with me into the garden and I will show you the stock that yields me an excellent interest." On going to the garden he showed the Bishop a large range of bee-hives. "There is the bank," he continued, "from which I draw my annual dividend, it never stops payment." Ever after that memorable visit, when any of his clergy complained to the Bishop of poverty, he would say to them, "Keep bees! Keep bees!"

BLACK BEES AND A LIGURIAN QUEEN.

Your reply in No. 28, regarding the age of bees I cannot altogether agree with, as, if the common bees have strayed into my three Ligurian hives, they by the number now in each must have strayed by swarms, and this is not very probable, as I observe that the Ligurians will stray and remain with the common bees. I do not find they will admit or allow strangers to enter or remain with them. At the same time I do not observe that (as was said when the Ligurians were first introduced), the common bees generally kill all the Ligurians when joined to them. This last summer I joined a Ligurian queen with a few bees to a common swarm, and observed them all this season until the young ones made their appearance. Can Ligurian queens breed both common and Ligurian bees? or can a Ligurian queen after breeding Ligurian bees breed common ones? I fancy not. Would you say how I can get the bees out of my old hive that appears to be falling to pieces? It is a common straw skep.—A. W.

[When Ligurian queens have been impregnated by black drones they frequently breed workers of both species, and this is, probably, the true explanation of the great number of black bees present in your Ligurian stocks.

The inhabitants of the decayed straw hive had better be united to an adjoining stock by driving, as recommended in pages 45 and 46 of "Bee-keeping for the Many."]

HOW IT FARED WITH THE PLUVIANS' SEASON OF 1861.

Season in Renfrewshire and Ayrshire—Swarms abandoning Hives and Run-a ways—Refractory Swarm—Bee-shooting in August.

Happily for your correspondents, full, not laconic, replies are the order of The Journal of Horticulture; otherwise bee-keepers in this quarter would find themselves in fitting frame to answer such interrogatories as those of "A North-Staffordshire Bee-keeper," as to how it fared with them, curtly, never worse. This miserable season has made equally telling to our eastern neighbours the appellation "The Pluvians," launched at our unfortunate district.

Judging by the reports in your Journal, stocks at the end of last season were better found on this than the other side of the Tweed; and, generally speaking, such as had a fair population withstood all the severities of the last dreadful winter surprisingly well. We had a premature mildness early in spring, succeeded by wet blustry weather till the end of March. The months of April and May, so critical to after-prosperity, were one uninterrupted continuance of dry cutting winds, during which many stocks that had come through the trying winter perished for want of a timely supply of food from their negligent owners; and even where this was duly attended to, bee-keepers found, on the burst of splendid weather June brought with it, that breeding had been so much retarded as to throw their stocks fully three weeks behind ordinary seasons, and quite unable to avail themselves fully of an unusually rich blow of Dutch clover, then beginning to whiten our fields.

This spurt of favourable weather gave a great impetus, so that towards the end of the month stocks showed symptoms of swarming: this, again, retarded by wet weather. My first swarm came off on the 3rd of July. We had variable weather till the middle of that month, and then St. Swithen cast his watery spell over us, so that, ever since, twenty-four hours' consecutive dry weather is fairly recordable among the remarkable occurrences. The monotony of soaking moisture, relieved occasionally by torrents, even within the last two months; on four different times bringing down our little river, which peacefully meanders through what Col. Newman, on account of early-pollen gathering, fancied "some sheltered valley," a raging flood converting it into an inland lake, and bearing on its bosom crops, and even live stock, in its onward progress to the Clyde. During such a state of matters it requires no great stretch of the imagination to fancy the fix our little favourites found themselves in. An unusual deficiency of swarms (particularly seconds), which to all recipients have been but little gain; in many instances where feeding was neglected they have perished miserably long ago, and all round this neighbourhood I do believe there is not a single instance of a swarm that unaided would survive over the spring. Stocks not in a much better plight, except such as had a little surplus of last season's honey.

The wet stormy weather, in addition to keeping bees close prisoners at the moors, quite ruined the heather bloom, so that stocks would have been much better at home, returning in all cases lighter than they went; in many dead.

One of the leading members of the Ayrshire Apiarian Society, writing to me the other day, mentions, "We have had a very poor honey harvest in this locality, our hives being lighter than I ever experienced. The hive from which I obtained the third-prize box was two medium swarms, and weighed only 16 lbs. in the beginning of last month, in two boxes, wrought on your adapter plan."

A peculiarity of the season noteworthy was several instances of swarms after being hived and working, some day suddenly abandoning the hive and disappearing, leaving several combs 4 inches and 5 inches deep. Run-away swarms, very common. Both being exemplifications of the sagacity of our little favourites, which, perhaps, having an intuition of the lateness, and forebodings of the poorness of the season, flew off to take possession of the ready-made works of some defunct colony, thinking thereby to store a little honey to prolong their existence, rather than expend their energies in the fruitless task of building useless comb.

Personally we had only one refractory swarm. A large prime one on Friday, the 5th July, came off contrary to our expectation during the first burst of a thunder-storm, settled high up on an old elm overhanging the hives, and there hung with singular nonchalance during the heavy rain that made us thankful to fly to shelter, meantime getting ready the necessary paraphernalia to intercept their flight to some tenantless hive, we supposed, their high position being generally with us but the temporary anchorage from whence to shape a course to their desired haven. Mine lacking the docility of our good friend "UPWARDS AND ONWARDS" obedient boys, which after disporting themselves on some such elevation return to obtain a full and free forgiveness for their innocent lark. An hour or two afterwards, the rain having abated, found the storming party ready for the attack. After setting up a couple of ladders lashed together, a volunteer sprung up to find the unclaspable, wet mossy trunk slippier than a greased pole to climb, he said, and was repulsed; the next beat off; a third seized the end of a rope, tied it round his waist together with a saw, and jumped into the ladders with a will we liked. After a hard struggle and many a slip, he wrought his way up to the lowest limb, from thence more easily upward and outward on the branch as far as it would bear his weight, sawing it, lowered it cautiously with the rope through the mass of foliage to the ground below. A few bees were by this process shaken off, but we had the bulk; so setting the hive above they soon ascended, placing it on the wall to attract the stragglers, thought the victory complete. But, alas! our hopes were groundless; for in a few minutes out they came, showing too clearly that the queen was wanting and soaring up fixed on the outmost point of one of the highest branches, far above their previous position, and quite beyond hope. A wet night setting in, not a little chagrined we beat a retreat, regretting much we had not placed a crushing finger on the royal person as we saw her coquet daintily upon the board before her flight.

Rain fell heavily all night, yet, notwithstanding, there hung the black mass, provokingly glittering in the morning sun. What was to be done? We reconnoitered their position from all points, that slim topmost branch rendering it all but impregnable. Suddenly remembering that in these days of Armstrong guns, as saucy little braves as these had come to terms, so, as a last resort, we opened fire, and by a well-directed shot snapped through the branch, and down they came some 20 feet, giving them time to collect after their bewildering flight, again selecting as our target the branch a foot or two above the swarm, let drive—down they were once more, almost within reach this time. Mounting the garden wall we found them higher by a yard than our longest fishing-rod. Rain on again. While planning what was next to be done, they began to thin off, and shortly gathered on another topmost branch, a much diminished band, the ground being strewed with many a wetted worker; so thinking further fighting cruelty, gave in. Sabbath morning there they were—in the afternoon they were gone—with our best wishes to the lucky finder of our refractory crew.—A RENFREWSHIRE BEE-KEEPER.

(*To be continued.*)

APIARIAN NOTES.

FIRST of all I have to thank "A DEVONSHIRE BEE-KEEPER" for his communication, and to declare that there was no irony meant in my communication. I certainly thought, as Huish's work was quite in an obsolete state, that my unknown friend had never seen it, as I read it nearly half a century ago.

Now, respecting the new discovery. Certainly as hen fowls, they say, have been known often to lay eggs when no male has been near them, the same might happen with insects. But "ultimately establishing the fact that a drone-breeding queen she is a virgin queen," I presume is only meant at certain times, not always.

I beg to remind my friend that I have frequently seen two and sometimes three queens on the alighting-board of a hive, within a day, or the same day, in which a swarm has gone off, and I have had three clusters all hived from one swarm, but after placing them on the stand, have generally found the supernumerary [illegible]

I have observed that the bees never fly away with a dead queen as they do with a worker; then, again, there are many royal cells in a hive, and they are hatched at various seasons. In July, 1860, I had a small cast from a stock of bees in which all the drones apparently had been killed by the bees nearly a month before (in June); this surprised me much, because I never had seen an instance of it before in my long experience.

In conclusion, I have frequently fancied that a diseased queen may, when impregnated, become quite irregular, and go out of her routine of laying; and observe the difference in the number of eggs laid in some hives to others.—H. W. NEWMAN, *Hillside, Cheltenham.*

A FORTUNE FROM A SHEEP.—In 1802, Mr. Bidwell, a law student in Stockbridge, Mass., told a poor lad that if he would catch and turn out his horse he might have it to ride home to keep Thanksgiving. The boy accepted the offer, and the day before Thanksgiving, as he was mounted on the horse ready to start for home, Mr. Bidwell handed him a silver dollar—the first dollar the boy ever had. Instead of spending it for personal gratification, as most boys now-a-days do, he bought a sheep with it. From that sheep he had, in 1832, a flock of 1064 sheep which he sold for 1506 dollars. The money he invested in up-town lots in New York city, purchasing ten lots for 250 dollars each, which he sold, in two years, for 12,000 dollars. This was the beginning of the fortune of Nathan Jackson, Esq., distinguished for his generous and munificent donations at various times to Williams' College, Mass. When a boy, the writer, with his brother and sister, each had a sheep given them, and their father kept them, and retained half the increase for keeping, thus affording an opportunity for procuring a little money which he and they could call their own. Myself, and brother, also, were allowed, each, a piece of ground to cultivate as he pleased, and were permitted to sell the products thereof for what they would fetch. In this way we were allowed to get money that we could call our own, it being the product of our own skill and industry. The brother of the writer is now a successful and forehanded farmer in Worcester county, Mass., and the writer has a farm in Hampshire county, Mass. How much these early lessons in rural industry and economy had to do with their present position can never be accurately estimated. Doubtless something and perhaps much. All farmers will find it a pleasant way thus to encourage their children by giving them an opportunity, by exercising skill and industry, to produce something they can call their own.—AN OBSERVER.—(*Boston Cultivator.*)

OUR LETTER BOX.

DISTINCTION BETWEEN GREY AND SILVER GREY DORKINGS (*J. R.*).—Grey Dorkings may be of any colour, inasmuch as the classes in which they are shown are for coloured Dorkings. A Silver Grey cock should have white hackle and saddle, black breast and tail, silver and black-barred wing, no red or chestnut colour. The pullet should have a grey body, and every feather's shaft should be white, the breast pale salmon colour, and the hackle silver striped with black.

POLAND COCKEREL (*W. E. B.*).—We should not allow a seven-months-old cockerel, to run with more than two or at most three hens.

"AN OBSERVER" ENLIGHTENED.—The observer of the mare's nest is informed, that although the present writer may very possibly possess "a still longer experience" than his critic, has not been above asking and receiving information from a source at the head of which stands the respected name of our now venerable father, Henry Taylor, in comparison with whom he again not only modestly hints, but frankly avows his "limited experience," and himself a young-bee-keeper.—A RENFREWSHIRE BEE-KEEPER.

"A DEVONSHIRE BEE-KEEPER" (*J. L.*).—Write to T. Woodbury, Esq., Mount Radford, Exeter.

SWELLING UNDER RABBIT'S JAW (*W. D. C.*).—It is probably a gathering which will suppurate—that is, break—and then will heal; but no one can say with certainty without seeing the Rabbit.

MUZZLE FOR DOGS (*E. L. E.*).—The only muzzle we know that allows the dog to open its mouth freely, yet effectually prevents the dog biting, is the French muzzle. It is a piece of iron projecting in front from beneath the under-jaw, and strapped firmly to the head.

LONDON MARKETS.—NOVEMBER 4.

POULTRY.

We have little to note in the way of change. Still a very moderate supply, and small demand. When the weather breaks up, and people come back to town, we may look for a rise in prices.

Each—	s.	d.		s.	d
Large Fowls	3	6	to	4	0
Smaller Fowls	2	0	,,	2	6
Chickens	1	6	,,	1	9
Ducks	0	0	[illegible]	[illegible]	0
Geese	6	0	[illegible]	[illegible]	[illegible]
Pheasant	2	3	[illegible]	[illegible]	[illegible]

Each—	s.	d.		s.	d.
Grouse	2	0	to	2	[illegible]
Partridges	1	3	,,	1	4
Pigeons	0	7	,,	0	[illegible]
Hares	2	0	,,	2	[illegible]
Rabbits	1	3	,,	1	4
Wild [illegible]	0	8	,,	0	[illegible]

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	NOV. 12—18, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
12	Tu	Statice spatulata.	29.673—29.663	45—39	E.	—	15 af 7	13 af 4	50 1	10	15 40	316
13	W	Statice speciosa.	29.586—29.493	48—40	E.	.17	17 7	12 4	58 2	11	15 31	317
14	Th	Saxifraga aspera.	29 566—29.240	50—41	S.E.	.57	19 7	11 4	6 4	12	15 22	318
15	F	Saxifraga hirculis.	29.387—29.260	54—31	S.W.	—	21 7	9 4	14 5	13	15 12	319
16	S	Artemisia indica.	29.572—29.522	49—31	S.W.	.25	22 7	8 4	22 6	14	15 1	320
17	Sun	25 Sunday after Trinity.	29.460—29.210	41—32	S.	.38	24 7	6 4	rises	○	14 49	321
18	M	Scrophularia mellifera.	29.880—29.772	40—30	N.W.	.02	26 7	5 4	24 2	16	14 37	322

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 48.8° and 34.4° respectively. The greatest heat, 63°, occurred on the 12th in 1841; and the lowest cold, 15°, on the 16th in 1841. During the period 125 days were fine, and on 113 rain fell.

GRAND FRUIT AND CHRYSANTHEMUM SHOW OF THE ROYAL HORTICULTURAL SOCIETY.

November 6th and 7th.

THE first visitor to the Exhibition, soon after the great conservatory was cleared of all but the Judges and those who were officially engaged, was His Royal Highness the Prince Consort; but the morning was too rough and wet for Her Majesty to venture out so early. It was also very much against the exhibitors of flowers, and many of the Chrysanthemums were roughed, and many more had to be held back altogether, and among them the seedlings, which are described in another page, from Mr. Bird's nursery. He and Mr. Salter, in the high spirit of chivalry, did not enter the lists against common growers of this their favourite flower, but made up a match, as an additional class to the schedule of prizes, between themselves, and came out in all the strength and force of their respective systems of growing and blooming the plants.

Mr. Salter grows and blooms on the natural system out of doors, and Mr. Bird is at the very top of the tree on the classic ground of modelling his flowers on the purely artistic principle, and without "cooking" a single floret the whole season, as I, who had seen them all the previous week, can vouch for.

The Judges were, very properly, selected from the members of the Floral Committee, and their highest award went to Mr. Bird, the second to Mr. Salter. Besides the two chiefs, there were over fifty exhibitors of collections of cut blooms, and all these were put together and took up one-fourth of the space which was allotted for flowers; the one half of the back part of the conservatory being filled with them, the other half with standards and new kinds. The fruit tables occupied the middle space of the house from end to end.

The contribution plants from the friends of progress to the Society for filling this grand conservatory are increasing rapidly, and on this occasion they were disposed in an evergreen belt-like arrangement along the whole inside front of the house, and the large Chrysanthemums in pots were placed on a sloping bank of three stages behind this belt of evergreens, in one half of the house. The pot Pompons occupied the corresponding half in the same manner, and the whole made the best effect I have ever yet seen on such an occasion.

The prize list shows the degrees of merit and the receivers, and I took quite a different way of reporting the cut flowers. I never saw such an opportunity of classifying the colours according to their shade, and I seized the opportunity to do them so for the first time. But I must mention another novelty which occurred on this occasion for the first time also—a novelty I fought hard with Dr. Lindley for five and twenty years back. At that time there was a Mrs. Randolph, the wife of a physician, who made exquisite imitation flowers out of feathers, chiefly the feathers of Brazilian birds. Mrs. Randolph exhibited collections of these till she was tired of it, but the doctor was inexorable, and would not hear of a prize, or any encouragement, no matter who battled with him.

The second novelty I allude to is this: Mrs. James Stoddard, who deceived me last year at the Crystal Palace with her artificial Dahlias, was awarded a prize for a collection of the most exquisite flowers that ever were made, and perfect models of Nature. Dahlias, Roses, Geraniums, Ranunculuses, and others of the high florist stamp. I hope I may hear that the Floral Committee will have the credit of sending the Judges who had the real good sense to encourage Mrs. Stoddard, for sure I am that half the ladies in the peerage would buy and have such beauties if once we could have them popularised at flower shows.

The third novelty was an In-door Plant Case, the invention of a lady who has devoted much care to it for some years. It is heated by hot water only, without a lamp of any kind, and we know that it preserved unhurt, even last winter, some of the choicest stove plants. On the present occasion it had grouped within it most tastefully Caladiums, Heaths, Camellias, Chinese Primroses, Begonias, Ferns, &c. It obtained great attention, was awarded a second prize, and we expect to see it become an ornament of most drawing-rooms. It is so very elegant, so very manageable, and productive of no dirt or offensive smell from the source of heat. A drawing and description will be found at page 130.

In another five and twenty years most flowers will be judged by their colours, and in their shades, as I have roughly done the Roses last summer, and now the Chrysanthemums. Out of a space of thirty-five yards long and six rows of blooms across, I began with *dark purples*, of which Wonderful is the very best. Very few had it there, as it is almost a new one. The rest, and all of them, are not down just as they ought to run in shading or planting, only the colours being kept together. Campestroni, Alarm, Progne, Negro Boy, Léon Lequay, and Saccoa Vera, all in one class of purples.

Then, the next is *lilacy purple*, beginning with Stellaris globosa, Versailles, Defiance (fine), Beauregarde (next finest), Aregine, Alma, and then some would set Wonderful here instead of at the head of the first section.

The next in order is *Indian red*, of which Triomphe du Nord is the head; then Prince Albert, Madame Poggi, General Hardinge, Christopher Colomb (yellowish and Indian red), and Picturatum roseum (large).

Next is *mottled*, between buff and Indian red, beginning with Dupont de l'Eure, Pio Nono, Curtius Quintus, Arthur Wortley, Lysias, Cassy, Auguste Mié, Poudre d'Or (not Powdered Or), and next is Fabius, for which there is not a match in the family. It stands alone between the Indian buffs and the yellows.

In *yellows*, Jardin des Plantes is far above all other yellows. This, and Wonderful, and White Queen of England, a perfectly new sport with the Messrs. Downie, Laing, & Laird, are the three best of all the new and newish Chrysanthemums. But, on with these yellows. Jardin des Plantes was in eleven collections, and every flower was first-rate in buttercup colour, and the nearest to it is Gluck, Annie Salter, Etoile Polaire, Yellow Perfection, and Plutus; but all these are a shade lighter than Jardin des Plantes. The real light yellows are—Golconda (fine), Yellow Formosa, or Lutea Formosa, Raymond next, Golconda, and Yellow Queen of England, one bloom of which in Mr. Bird's large collection was 8 inches in diameter all but a fraction. Such a flower was never seen before.

After these begin another kind of *tinted lilacs*, as Marshal Duroc, the best of the tint, and no match to it. Then light lilacs—Themis, Princesse Marie, Nonpareil, Beauty, Dr. McLean, Lady Hardinge, Alfred Salter, Glory, and Favourite.

The *blushes*, both deep and light, begin with Queen of England; Duke; Pearl; Vesta, all but white; Cassandra, ditto, and also very deep at times; Mrs. W. Holborn, a splendid bloom, all but white; Novelty, ditto, the biggest of them all.

Then *pure white*, begining with the new sport from the Queen of England, pearly white; Formosum, the purest white; Goliath, creamy white; Lucidum, pearl white; White Globe, very large; and sometimes Vesta and Cassandra are pure white. One Dr. Rosas, in Mr. Bird's, is a new colour for which there was no match there—a dark rose in Chrysanthemum colour.

Mr. Bird set up two dozen of large bouquets, each of one kind, as six bouquets of Vesta, each with eighteen blooms; two ditto Queen of England, and eighteen blooms in each; and one of Marshal Duroc, and of Fabius, Mr. Dechamps (a fine yellow), Madame Lebois, Stellaris globosa, Themis, two of Golden Queen of England, one of Alma and Wonderful, Gluck, Progne, Triomphe du Nord, Novelty, Dr. Rosas, and Madame Poggi. These were in cut-glass dark bottles except the three of Queen of England, and a yellow ditto, which were in silver tankards or cups won at former shows. Then he had twenty-four novelties in single blooms on a board, twelve Princesse Marie, and some Triomphe du Nord.

Mr. Salter set up as many more in similar kinds, and a full collection of Pompons in the same way, with several novelties; but I intend to see and report his whole collection in the Versailles Nursery soon. Among the collections of cut Anemone-flowered kinds, the best still was Fleur de Marie, Gluck, and Louis Bonamy; then King of Anemones and Madame Godereau, a large white kind.

Mr. Turner, of Slough, set off in the first class for pot plants six kinds, and took the Nurserymen's first prize for them. His plants were better set for effect than he ever had them, and the kinds were in three rows rising one above the other. The first row stood thus—Mount Etna first, in front above it Vesta, and above that Prince Albert; Vesta making a strong contrast with the other two. The next half, or row, began with Golden Christine, then Julie Lagrave, dark as Madame Camerson or Madame Poggi. The third, Hermione. These contrasted favourably three ways, up the row, across the rows, and cross-cornerways.

Mr. A. Forsyth, Rectory Road, Stoke Newington, followed and took the next prize. He also set up his plants exceedingly well, thus—Golden Christine, Defiance, and Voltaire, in the first row; and Annie Salter, Mount Etna, and Vesta in the next.

Then followed the Amateurs, and Mr. Ward, gardener, to W. Fowles, Esq., Tottenham Green, took the first prize. His were the best-done plants at the Show. He had Beauty du Nord (dark), Defiance, and Pilot in the first row; and General Havelock, Alma, and Golden Christine in the second. All thus is well contrasted as those from the nurserymen aforesaid. Mr. [illegible]orge, gardener to J. Nichol, Esq., Stamford Hill, took the [illegible]ond prize—thus, Vesta, Alma, and Golden Christine, first [illegible]: and Prince Albert, Insigne, and Old Christine, in the [illegible]nd. Now, Insigne and Christine being both of one tint, and [illegible]oth side by side, with the dark Prince Albert in front of them, [illegible]as the very worst thing that ever was done with flowers; [illegible]hereas, if Prince Albert was in the middle, the row would [illegible]trast just as Mr. Turner's first row did; but this was the [illegible]ly fault of setting up at the Show. A third prize was given [illegible] Mr. Gl[illegible]er, gardener to B. C. L[illegible]age, Esq., Tulse Hill, [illegible]rixton, fo[illegible] [illegible]hevalie[illegible] [illegible] Moun[illegible] [illegible] light Christine, in the first row; and Vesta, Dr. McLean, and Golden Christine in the next, all well set for effect.

Class 3 was for three plants, and the first prize was to Mr. Ward aforesaid for Chevalier Dumage, Christine, and Beauty du Nord again. The second to Mr. Harper, gardener to J. F. Bennet, Esq., Tulse Hill, for Chevalier Dumage, Prince Albert, and Christine; and the third prize to Mr. George aforesaid, for Annie Salter, Christine, and Voltaire. The last two too much alike for going together.

Class 4, Pompons, six kinds again, and Mr. Turner and Mr Forsyth were first and second in them, as in the large ones. These, and indeed all the Pompons, were beautifully done. Mr. Turner's kinds were La Vogue, Mustapha, and Madame Pippin, Duruflet, Bijou de l'Horticulture, and Cedo Nulli. Mr. Forsyth's kinds were Solomon or Salamon, Le Sultan, Cedo Nulli and Yellow Cedo Nulli, Hélène and Ste. Thaïs.

Class 5, Same from Amateurs; and here Mr. D. Hutt, Margaret Place, Hackney Fields, took the first prize with splendid specimens of Cedo and Golden Cedo Nulli, Andromeda (the best there), Salamon, Duruflet, and Général Canrobert (the best of the yellow Pompons. Second prize to Mr. Weston, gardener to D. Martineau, Esq., Clapham Park. I took him on the wrong scent last year for bad spelling at the Crystal Palace. The collections on each side of him were set wrong, and he suffered for the wrongs of his fellows till he righted himself. He is one of the best spellers on the turf, and I am glad to book him so. His plants were excellent; Général Canrobert, Golden and plain Cedo Nulli (the three best of the family), Adonis, Hélène, and Duruflet. His Adonis was a real Adonis. Third to Mr. Ward aforesaid, for Cedo Nulli and Golden ditto, Andromeda (a fine thing), Hélène, and Duruflet. Bad luck to them; the two should never be seen in one collection of his—they are too much of a caste. Fourth prize to Mr. Bolton, Edwin Terrace, London Fields, Hackney, who had a very fine Général Canrobert, and the rest not quite so good. These were extras in this class, for they were all very good.

Class 6, Standard plants open to all comers, and Mr. Forsyth was first. Mr. Smith, Tollington Nursery, Hornsey Road:—He being a member of the Floral Committee, I took particular attention to his kinds and his way of standarding them. They were Cedo Nulli, Mr. Anstie (a capital yellow Anemone), President, Aurora Borealis, Julie Lagrave (nearly as dark as Bob), and Golden Cedo Nulli. These standards being most useful in "making up" a conservatory in the country, it was a wise resolve to give them a class and prizes, and Mr. Smith might take the lead in the trade for standards; at all events, from his way of doing them, and from his being the only one in the trade who seems to look on them as I do, I shall certainly go to him for my first standards if ever I can get up the length of a conservatory. Mr. Salter, Mr. Bull, and others had lots of new kinds and recent ones, which I passed over, as I expected to see them under more favourable weather at the Crystal Palace, where all the novelties must take precedence of all other things.

Class 7, New varieties of this year; and Mr. Forsyth, as above, took the only prize in them, one called Rifleman being one of the best of them, and a dwarf sport from Yellow Cedo Nulli, and in the way of Comte Achille Vigier, promises to be very useful for specimens. Then he had Golden Trillby, Boadicea (large, and after the tints of Dupont de l'Eure), Golden Hermione, and Lady Hardinge.

Class 8, Single specimens on single stems. First prize to Mr. South, gardener to G. A. Tysser, Esq., Upton, Essex, for an immense large Christine; second to Mr. Ward; and third to Mr. Turner for more ordinary-grown plants. D. Beaton.

FRUIT.

This exhibition of Fruit far surpassed any other that the Society has ever held. Whether it is that it was displayed to better advantage in the large conservatory at Kensington Gore than at either Willis's or St. James' Rooms, or whether it was greater in extent and altogether finer, certain it is that it was far more effective and attractive than either of those. The collections were arranged on a long table extending the whole length of the conservatory, separated in the centre by a transept table, in the centre of which was a splendid specimen of a Tangerin Orange tree, and round it were arranged the "collections" of fruits. On this table some of the most extraordinary specimens of fruits were exhibited. Twelve Uvedale's St. Germains, exhibited by Mr. Solomons, weighed upwards of 39 lbs, Beurré [illegible] each, and [illegible]atillac [illegible] each. The other attractive exhibitions were the Grapes of Mr. Henderson, of Trentham; Mr. Hill, of Keele Hall; Mr. Tillyard, of Stanmore Priory; Mr. Kay, of Finchley; and Mr. Meredith, of Garston.

The Pears from Mr. Anderson, of Oxenford Castle, N.B., and those of Mr. Ingram, of Frogmore, Mr. Dwerrihouse, of Heckfield, and Mr. Harrison, of Oatlands, attracted particular attention. While the Apples of Mr. Newton, of Enfield, Mr. Ingram, of Frogmore, and Mr. Sidney Ford, of Horsham, were the most attractive in their class. It is impossible, in such a collection to specify any except those that were the most prominent, and we must, therefore, confine our report, with a few exceptions, to those only which gained the awards.

Class A, Collection of Fruits (Fruiterers only).—In Mr. Solomons' collection there were baskets of some of the largest Pears that ever were exhibited. They were all of foreign growth, and included Uvedale's St. Germain under the name of Belle Angevine, Vicar of Winkfield called Bon Curé, Beurré Diel, Easter Beurré, Catillac, St. Germain, Winter Bonchrêtien under the name of Bonchrêtien d'Auch, Crassanne, Glou Morceau, and a variety of brilliant colour called Cuisse Madame, but which was Spanish Bonchrêtien. The Apples were Reinette de Canada, Calville blanche, and Pomme d'Api. There was also a basket of Black Hamburgh and Muscat of Alexandria, along with two boxes of Chasselas de Fontainbleau Grapes, beautifully russetted. These, with four Melons, four Pines, a basket of Oranges, one of Pomegranates, and one of Peaches, made up a magnificent collection of forty-nine dishes. This, of course, received the first prize. The second prize was awarded to Messrs. Webber & Co., of Covent Garden. This, too, was a very fine collection, and consisted mainly of English-grown fruit. This collection was served up in the beautiful white-glazed china ornaments of Messrs. Minton, which produced a highly ornamental group.

Class B, For Collection of Fruits for Private Growers.—In this class there were three competitors—Mr. Henderson, of Trentham, and Mr. Tillyard, of Stanmore, being equal firsts; and Mr. Kaile, of East Horsley Towers, Surrey, being third. In Mr. Henderson's collection there were twenty-eight subjects exhibited, of which his White Muscats, Black Hamburgh, and Lady Downe's Seedling Grapes were very excellent. There were three Melons—Cashmere, Cocoa-nut, and Gem; King of the Pippins, Blenheim Pippin and Calville blanche Apples; and in Pears Easter Beurré, Knight's Monarch, Forelle, Duchesse d'Angoulême (exhibited as Beurré Vert), Brown Beurré, Beurré Diel, Beurré Clairgeau, Winter Nelis, Beurré Rance, Bergamotte d'Esperen, Jersey Gratioli, all good, with the exception of Forelle and Beurré Clairgeau, which were deficient in colour. A dish of White Ischia Figs, one of a green Plum (erroneously called Coe's Late), and Eugenia Ugni, made up the collection. In Mr. Tillyard's the Grapes were very fine, and consisted of Muscat of Alexandria in fine condition, and of a fine amber colour; White Tokay large bunches; immense bunches of Trebbiano; and a basket of Oldaker's St. Peter's. He had four towering Lemon Queen Pines, and two of the Old Queen. The Pears were Napoléon, Glou Morceau, two dishes of Beurré de Capiaumont, Beurré d'Aremberg, Chaumontel, and Passe Colmar. The Apples were Alfriston, Blenheim Pippin, Margil, Downton Pippin, Fearn's Pippin, an Apple called Wellington, but which was more like Wormsley Pippin, and in all probability was so; and Lamb Abbey Pearmain. His Plums were fine, and were Coe's Late Red, and two dishes of Blue Impératrice. The two Melons were Heckfield Scarlet Flesh and Hybrid Cashmere. There was a basket of fine Morello Cherries, a dish of Angelique Figs, two dishes of Raspberries, one of White Currants, and one of Eugenia Ugni—in all thirty-three subjects. Mr. Kaile's exhibition was a small one, and consisted of only twelve subjects, all of which were good of their kind. There were four dishes of Apples, two of which were Fearn's Pippin, one Golden Winter Pearmain, and one Herefordshire Pearmain. One small Pine, one Melon, one dish of Marie Louise Pear, one dish of Black Hamburgh Grapes, one of Coe's Golden Drop, and one of Coe's Late Red Plum, one dish of Medlars, and one of Raspberries.

In Class C, Pine Apples (three distinct kinds), there were three exhibitions. The first prize was awarded to Mr. Page, gardener to W. Leaf, Esq., Streatham, for Queen, Smooth-leaved Cayenne, and Ripley Queen. Second to Mr. Muggleton, gardener to Alderman Cubitt, Penton Lodge, Andover, for Smooth-leaved Cayenne, Prickly Cayenne, and Queen. Third to Mr. Botger, gardener to J. Gott, Esq., Armley House, Leeds, for Montserrat and two Enville.

In Class D, For a Single Fruit of Any Variety of Pine Apple, there were thirty-three exhibitors. The first prize was awarded to Mr. J. Floud, gardener to R. Fothergill, Esq., Aberaman House, Aberdare, Glamorganshire, for a very fine Smooth-leaved Cayenne, weighing 7 lbs. 14 ozs.; the second to Mr. Thomas Ingram, gardener to Her Majesty at Frogmore, for a very large and handsome Queen; and the third to Mr. Tillyard, gardener to J. Kelk, Esq., the Priory, Stanmore, for a fine tall Lemon Queen.

In Class E, For Baskets of Muscats of not less than 10 lbs., the exhibitions were very fine, and particularly those of Mr. Tillyard, of the Priory, Stanmore, to which the first prize was awarded. The bunches were large and finely set; the berries were also large, full, and plump, and of a beautiful amber colour, and the aggregate weight was 22¼ lbs. Those of Mr. Hill, of Keele Hall, to which the second prize was awarded, were not quite so large as Mr. Tillyard's, and were more highly ripened, having begun to shrivel; but they were of a very fine amber colour. The third prize was awarded to Mr. Joseph Meredith, of Garston, near Liverpool. They were finely coloured, but not as large as either Mr. Hill's or Mr. Tillyard's, but they were well ripened and of very rich flavour. Those of Mr. Kay, market gardener, Finchley, were well grown, plump, and well set, but not so highly ripened as either of the preceding, and they were rather green.

Class F, White Muscats, single dish. In this class there were some very good exhibitions. Mr. Tillyard was first with three short, broad, thickly-set bunches of very large, roundish-oval berries, of a fine amber colour. Mr. Hill was second; his three bunches were long and tapering, well set, and beautifully coloured; one of them, which was the largest, was a very handsome bunch; but the other two were rather smaller. The exhibition of Mr. Meads, of Minely, Blackwater, Hants, consisted of three splendid bunches; but, unfortunately, every berry was marked with a dark brown spot on the end, which quite spoiled their appearance. It is worth recording that the Vines which produced these fruit had only been planted sixteen months. The variety exhibited by Mr. Tillery, of Welbeck, appears to be distinct from all the others. The bunch is very long, tapering, and loose, and the berries, which are of a darker colour, are also much longer and more oval than any of the others. Those exhibited by Robert Crawshay, Esq., of Cyfarthfa Castle, Merthyr Tydvil, seemed to be the same variety as Mr. Tillery's; but they were not so well coloured, being altogether of a greenish colour.

In class G, which consisted of a single dish of White Grapes of any Variety, Mr. Hill was first with three enormous bunches of Trebbiano, the largest we every saw of that variety, the weight of the aggregate being 9¾ lbs. The berries were very large, and of a fine pearly colour. The second prize was awarded to Mr. Meredith for three bunches of White Nice, the aggregate weight of which was 9 lbs. 12 ozs. The third prize was taken by Mr. Tillery, of Welbeck, with Trebbiano, three very excellent bunches. Among the White Grapes was shown a collection of four sorts of Muscats sent by Mr. David Thomson, of Archerfield; they consisted of Muscat of Alexandria, a short, thick-set bunch; the Tynningham Muscat, a long, tapering bunch, like those that Mr. Tillery showed; the Bowood Muscat, a short, thick-set bunch, like Muscat of Alexandria, but much more advanced in ripeness; and a form of Muscat, which was so far ripened as to have almost become raisins. These were all grown in the same house under the same circumstances, and were sent to exhibit the different forms the varieties present. Upon these the Fruit Committee will report at their next meeting.

Class H, Black Hamburgh Grapes (in baskets of not less than 10 lbs). The first prize was taken by Mr. Kay, market gardener, Finchley; the berries were large and finely bloomed. Mr. Hill, who was second, had also a very fine basket, and very little, if at all, inferior to those exhibited by Mr. Kay; but, in consequence of having been necessarily so long cut, and having to travel so great a distance, they had not the freshness of those which took the first prize. The third prize was awarded to Mr. Henderson of Trentham, whose Grapes were not so large as Mr. Kay's and Mr. Hill's, but were nevertheless of excellent quality.

Class I, Black Hamburgh Grapes (single dish). The first prize in this class was awarded to Mr. Henderson, of Trentham, for three beautiful bunches, short, broad, and thickly set; the colour was of a jet black, and not a berry was rubbed. Mr. Kay was second and Mr. Hill third.

The only exhibitor in Class J was Mr. Henderson, of Trentham, whose Frankenthals were true; and it is to be remarked that every Black Hamburgh which was exhibited at the Show were Frankenthals.

Class K, BLACK GRAPES (any variety). The first prize in this class was awarded to Mr. Page, gardener to W. Leaf, Esq., Streatham, for Barbarossa, small short bunches for that variety, but the berries were large, finely coloured, and closely set. The second prize was awarded to Mr. Hill, of Keele Hall, for Lady Downe's Seedling and Trentham Black, both very good.

Class L.—This class, which was for collections of PEARS (one dish of each) was well represented both in quantity and quality. The most remarkable point in this exhibition is, that the first prize was awarded to a collection grown so far north as the neighbourhood of Edinburgh. It was sent by Mr. Anderson, gardener to the Earl of Stair, Oxenford Castle, and containing no less than twenty-two distinct sorts. They were— Marie Louise, Duchesse d'Angoulême, Louise Bonne of Jersey, Napoléon, Crasanne, Beurré Diel, Beurré d'Aremberg, Beurré de Capiaumont, Beurré Clairgeau, Easter Beurré, Winter Nelis, Glou Morceau, King Edward, Colmar d'Aremberg, Doyenné Gris, Buchanan's Spring Beurré, Colmar, Flemish Beauty, Poire Neill, Maréchal de la Cour, Suzette de Bavay, and Rousse Lench. They were all good specimens, though from being grown so far north they had not attained the same degree of maturity as the generality of the other collections; but there was not an inferior dish, nor one incorrectly named, among them. The second prize was awarded to Mr. Ingram, gardener to Her Majesty at Frogmore. This was a smaller collection than the preceding, but the fruit was large, very fine, and just ready for table. It consisted of Chaumontel, Van Mons Léon le Clerc, Vicar of Winkfield, Knight's Monarch, Marie Louise, Easter Beurré, Prince Albert, Passe Colmar, Fladberg, Beurré Diel, Glou Morceau, Beurré de Rance, and Moccas. Mr. Dwerrihouse, gardener to Lord Eversley, at Heckfield, took the third prize with a very excellent collection, consisting of Marie Louise, Josephine de Malines, Triomphe de Jodoigne, Winter Nelis, Beurré Diel, Delices d'Hardenpont, Easter Beurré, Swan's Egg, Napoleon, Duchesse d'Angoulême, St. Michael, Beurré de Rance, Passe Colmar, and Knight's Monarch. The collection exhibited by Mr. Cox, of Redleaf, in this class, was also meritorious, and contained some good specimens.

Class M, DESSERT PEARS (in six distinct kinds). In this Mr. Ingram, of Frogmore, was first with beautiful glowing specimens of Van Mons Léon le Clerc, Beurré Diel, Glou Morceau, Beurré de Rance, and Knight's Monarch; the last grown as nobody else ever grows it, with a fine bronzy glow on one side of it. The second prize was awarded to Mr. Harrison, of Oatlands, for Marie Louise, Passe Colmar, Glou Morceau, Ne Plus Meuris, and Winter Nelis; and the third, to Mr. Spivey, gardener to A. Houblon, Esq., Hallingbury, Bishop Stortford, for Josephine de Malines, Passe Colmar, Beurré Diel, Glou Morceau, Marie Louise, and Thompson's.

Class N, DESSERT PEARS (three dishes of distinct kinds). In this class there were some fine dishes, particularly those of Mr. Harrison, of Oatlands, which were tastefully set up and surrounded with coloured tissue papers. They were—Marie Louise, Duchesse d'Angoulême, and Glou Morceau. The second prize was awarded to Mr. G. Tranter, gardener to the Hon. G. D. Ryder, Westbrook, Hemel Hempstead, for Brown Beurré, Marie Louise, and Beurré Diel; and the third, to Mr. S. Ralphs, gardener to R. Sturges, Esq., Mount Felix, Walton-on-Thames.

Class O, DESSERT PEARS (single dish). In this there were a great many entries, but generally speaking very few of the exhibitions were anything remarkable considering the great number that was exhibited. The first prize was awarded to Mr. Ingram, of Frogmore, for very fine specimens of Glou Morceau; second to Mr. Tranter, for Marie Louise; and third to Mr. Ralphs, for Beurré Diel. An extra prize in this class was awarded to Mr. T. Westbrook, Abingdon, Berks, for a dish of Beurré d'Aremberg.

Class P.—In this class, which was for UVEDALE'S ST. GERMAIN PEARS, Mr. Snow, gardener to the Countess Cowper, Wrest Park, was first; Mr. Park, gardener to G. H. Vernon, Esq., Retford, second; and Mr. R. W. Craik, gardener to F. F. Rufford, Esq., Stourbridge, was third.

Class Q, was for CATILLAC PEARS, and the first prize was taken by Mr. Harrison, of Oatlands; the second by Mr. D. Cunningham, gardener to the Bishop of London, Fulham; and the third by Mr. W. John Barnett, Decker Hill, Shiffnall.

Class R, for KITCHEN PEARS of any variety. Mr. Snow was [illegible] with Warden; Mr. Barnett, for Beurré Diel; and no third [illegible] this class. Mr. Cunningham exhibited good specimens of Catillac, but as there was a special class for them they could not compete. We do not quite see the propriety of admitting Beurré Diel into this class as a kitchen Pear, if so, then any Pear which is not ripe may be regarded as a kitchen Pear. There ought to be a line drawn somewhere, or it ought to be defined what is a kitchen Pear.

In class S, for the HEAVIEST FIVE DESSERT PEARS, the first prize was awarded to Mr. Tranter; the second to Mr. Spivey; and the third to Mr. Dwerrihouse.

Class T, jar of STEWED PEARS. This class was well represented and closely contested. It was a condition this year that the fruit should be prepared without sugar, spice, or any colouring matter, the real object of the exhibition being to ascertain which was the best sort for stewing, and which had in itself most sugar and flavour. At the former exhibitions, extraneous substances were used, such as sugar, spice, and colouring matter, so that the true character of the fruit was completely disguised, and the artist who most skilfully manipulated with these accessories and prepared the most palatable dish was proclaimed the successful candidate. On this occasion the fruit was perfectly natural, and the Swan's Egg prepared by Miss Ingram, of Frogmore, received the first prize; Miss Ingram also exhibited Vicar of Winkfield, which were second in quality. But as an exhibitor cannot take two prizes in the same class, the second prize was awarded to Mrs. Powell, Cedars Cottage, Old Windsor, for Chaumontel; and the third prize to Mrs. Smith, Upper Sydenham, for Chaumontel. There were also several other exhibitions; but there were none that were at all good in flavour, and some were positively flavourless. Miss Ingram also exhibited a jar of baked and dried Swan's Egg, which were very good.

Class U, collection of DESSERT APPLES (one dish of each). In this class there were some very fine exhibitions. The fruit was well grown, and very finely coloured. The first prize was awarded to Mr. John Newton, gardener to G. J. Graham, Esq., East Lodge, Enfield Chase, who exhibited Ribston Pippin, Cockle Pippin, Pearson's Plate, Cornish Gilliflower, Fearn's Pippin, Golden Reinette, Margil, Hicks' Fancy, Beachamwell, Court of Wick, Old Golden Pippin, Downton Nonpareil, King of the Pippins, Franklin's Golden Pippin, Green Nonpareil, Herefordshire Pearmain, Golden Nonpareil, Golden Russet, De Neige, Adams' Pearmain, Sam Young, Screveton Golden Pippin, and Cluster Golden Pippin. The second prize was awarded to Mr. Cox, of Redleaf, for Fearn's Pippin, Castle Major, Court of Wick, Golden Knob, Col. Vaughan, Brabant Bellefleur, Court Pendu Plat, General Wolfe, Golden Winter Pearmain, Franklin's Golden Pippin, Crackling Pearmain, Ribston, Farleigh Pippin, Hughes' Golden Pippin, Winter Queening, Maid of Taunton, Kirke's Golden Reinette, various Nonpareils, Scarlet Pearmain, Royal Russet, Lemon Pippin, Downton, Hollow-eyed Pippin, and Christie's Pippin. The third prize was awarded to Mr. Mortimore, gardener to the late Miss Brown, Carshalton, for Ribston, Prince's Pippins, Yellow Ingestre, Franklin's Golden Pippin, Bull's Golden Reinette, Newtown Pippin, Claygate Pearmain, Wormsley Pippin, Blenheim Orange, and King of the Pippins.

Class V, DESSERT APPLES, collection of six dishes distinct sorts. The first prize was awarded to Mr. Ingram, gardener to Her Majesty at Frogmore, for Rosemary Russet, Small's Golden Pippin, Cox's Orange Pippin, Fearn's Pippin, Old Nonpareil, and Court Pendu Plat. The second prize was awarded to Mr. Snow for Cornish Aromatic, and Fearn's Pippin; Court Pendu Plat, Ribston, and Bull's Golden Reinette. Mr. Newton was third with Cornish Gilliflower, Fearn's Pippin, Pearson's Plate, Ribston, Cockle Pippin, and King of the Pippins.

Class W, DESSERT APPLES (three dishes). The first prize was awarded to Mr. Sidney Ford, gardener to W. E. Hubbard, Esq., Horsham. They consisted of Ribston Pippin, Blenheim Pippin, and King of the Pippins. The second was awarded to Mr. Rutland, Garstone Castle, Hereford, for Fearn's Pippin, Ribston, and King of the Pippins. Mr. W. Hall, gardener to Capt. F. Fordhook, of Ealing, third for Court Pendu Plat, Ribston Pippin, and King of the Pippins.

Class X, DESSERT APPLES (single dish). In this class the exhibitions were very numerous, and contained a vast number of varieties, many of which were not usually met with at fruit exhibitions, and were evidently sorts of local interest. The first prize was awarded to Mr. Ingram, of Frogmore, for Cox's Orange Pippin; and Mr. Simpson, gardener to Lady Molyneux, Stoke Farm, Slough, was second. Mr. Turner, of Slough, being third both with Cox's Orange Pippin. All the exhibitions of this beautiful Apple were remarkably fine. The colour was bright, and the flavour very fine.

Class Y, Collection of Kitchen Apples (one dish of each). The first prize was awarded to Mr. Mortimore, Carshalton, for Celini, Golden Noble, Beauty of Wilts, Ribston Pippin, Hawthornden, Blenheim Orange, Hoary Morning, Kirke's Admirable, Wormsley Pippin, and Dumelow's Seedling. Mr. Newton, gardener to G. J. Graham, Esq., was second with Holland Pippin, Beauty of Kent, Brabant Bellefleur, Norfolk Beefing, and Kentish Fillbasket.

Class Z, Six Dishes of Kitchen Apples. Mr. Betteridge, Steventon, Berks, was first with Alfriston, Kentish Codlin, Minchall Crab, Cat's Head, and Blenheim Orange. Mr. Snow was second with Wellington, Blenheim Orange, Cumberlean, Golden Noble, Celini, and Bedfordshire Foundling.

Class AA, Three dishes of Kitchen Apples. Mr. Smith, gardener, Liscard, Cheshire, was first with Mère de Ménage, Alfriston, and Beauty of Kent. Mr. Holder, of Eton, was second with Celini, Blenheim Pippin, and Alfriston.

Class BB, Single dishes of Kitchen Apples. The first prize was awarded to Mr. Lee, gardener to Viscount Combermere, Whitchurch, Salop, for Mère de Ménage (immense fruit) ; second to Mr. Young, gardener to R. Barclay, Esq., Highgate, for Alfriston.

Class CC, Kitchen Apples, the heaviest five fruit. The first prize was awarded to Mr. Green, gardener to Mrs. Honeywood, Kelvedon, Essex, for Gloria Mundi, called American Pippin, weight in the aggregate 5 lbs. 5 ozs.

Class DD, Pommes Tapées.—This is the name given to Apples dried in the way of Normandy Pippins. There was only one exhibition, and the first prize was awarded to Mr. William Young, gardener to R. Barclay, Esq., West Hill House, Highgate. The sort upon which the experiment was made was Blenheim Pippin, and the attempt was to some extent successful, but they were not so dry as Normandy Pippins are, nor would they keep so well.

Class EE, Oranges, Lemons, &c., one dish of each. There was only one collection exhibited, for which the first prize was awarded to Mr. W. Latoman, gardener to J. Campbell, Esq., Hendon.

Classes FF and GG, Oranges in Pots, there was no competition.

Class HH, Melons.—In this class there was a very good exhibition for the season, but few of them were of any worth. The Heckfield Hybrid exhibited by Mr. Dwerrihouse, and to which the first prize was awarded, was a most delicious fruit, and quite equal to any Melon in the best of the season. Mr. Pryer, gardener to G. Perkins, Esq., Sevenoaks, was second with a very good green-fleshed Melon; and Mr. J. Barnett, Decker Hill, Shiffnal, was third.

Class II, Plums (single dish).—The first prize was awarded to Mr. Snow for some very excellent Blue Impératrice, which were plump and richly flavoured. Mr. Cox, of Redleaf, and Mr. Mortimer, of Carshalton respectively took the second and third prizes for the same variety, which were more shrivelled than Mr. Snow's. Some very good-looking Reine Claude de Bavay were exhibited, but they were quite wanting in flavour.

In Class JJ there was a splendid dish of Sir Harry Strawberries, exhibited by Mr. J. Widdowson, gardener to C. Barnes, Esq., Chorleywood, Herts, to whom the prize was awarded.

In Class KK, Currants, there was no competition.

Class LL, Raspberries (single dish).—There were two exhibitions, one by Mr. F. W. Park, who received the first prize, and one by Mr. W. Kaile, East Horsley Towers, who received the second prize. In both cases the fruit was small, and quite without flavour.

Class MM, Miscellaneous.—Mr. Hill, of Keele Hall, sent a very interesting collection of Grapes of thirteen varieties. They included—Black Hamburgh, Muscat of Alexandria, Trentham Black, Lady Downe's Seedling, Muscat Hamburgh, Black Prince, Marchioness of Hastings, West's St. Peter's, Sahibee, Bidwell's Seedling, Old Tokay, Barbarossa, and a splendid little Grape, called Muscat Noir d'Angers, deliciously flavoured, and with a fine Muscat aroma. To this the first prize was awarded. Mr. Ivery exhibited large roots of Dioscorea batatas. A bag of a new seedling Potato, raised by Mr. S. A. Daintree, of Fen Drayton, near St. Ives, Hunts, was exhibited, which is reported to be ten days to a fortnight earlier than Ashleaved Kidney, and to keep in good eating condition till the new Potatoes come again. Mr. Ingram, of Frogmore, sent a fine dish of Salway Peaches, to which a fifth prize was awarded. There were several other exhibitions in this class, but for which we have not space to record.

CHRYSANTHEMUMS AND OTHER FLOWERS

AT MR. BIRD'S, GREEN LANES, STOKE NEWINGTON,

October 31.

When Mr. Bird took the lead in Chrysanthemums, those whom he distanced and kept at their proper distance at the shows congratulated themselves with the comfortable idea, or rather with the discovery which a learned friend of mine had made, and by which he could account for the success of this spirited grower—namely, that the whole secret of the success was owing to Mr. Bird's nursery being bounded by the old Hackney brook, which was richer than any mixture that could be made with any or all the fertilisers put together. And as it is pleasant to find that we are much of the same mind as our best friends, I must just say, in justice to the friend aforesaid, that I was much of the same mind with him on that point. But, in justice to Mr. Bird, also, I must now confess that my friend and myself were just as wide of the mark as if we could not hit the Monument.

There is no Hackney brook along that way now. The high-level-drainage people swallowed the brook, and put in two thousand cubic yards, or loads, of their excavation, to fill up the channel of the fertile waters by which they and we, the beaten and their comforters, supposed Mr. Bird's success had originated. All this season Mr. Bird was under the necessity of using clean, clear water from the New River Company for all his plants. He had to go to a large expense, and did so, just as he does his Chrysanthemums. He has the river water on in every house, and a tap in the centre of each division of his houses, with a long coil of gutta percha pipe to each tap, by which, instead of with watering-pots, he waters all his plants, and the same arrangement is all over the place. But the plan pays, and that is enough ; no matter what a thing costs, if you can afford it, as long as it will pay to do it according to Mr. Bird's way of doing business.

Well, he does business all over the three kingdoms, and to America and Australia, in a most extraordinary manner for an Englishman. He keeps no books, I mean account-books. He is a ready-money merchant, and if we cannot do business with him that way, why we cannot see the way he packs his plants for long journeys in general, and for short ones in particular.

The way I pack my Geraniums for my agents is different, as I thought, from the packing of all the nurserymen in the world. The Messrs. Henderson, of the Wellington Road Nursery, have never seen my way of packing among all their trade dealings. I have sent plants of Geraniums to all parts of Europe, and to the southern States of America, by way of New York, as safe as any one who ever tried. But now I have just seen and learned that Mr. Bird packs his Chrysanthemums exactly as I have done Geraniums for the last five and twenty years, and quite different from all other nurserymen. It is far the cheapest and safest way for bedding stuff and all common plants.

The balls are turned out of pots and wrapped in a square of newspaper. The top of the plant is just within the folds of the paper, and that end is left loose; the bottom is done by doubling over the folds of paper round the ball, and by that way of doing it one thousand plants can be put into one case, all in paper parcels open at one end. If any one of them gets a damp leaf, or anything the matter with it, that indisposition is confined to the one plant, or one parcel.

Well, without a drop of liquid manure from first to last, Mr. Bird has far better flowers this season than ever he had before ; and I should think no one about town or from the country will have a chance against him, so that my notes can very soon be verified or be put to the test. Of Vesta alone he could cut a thousand blooms the last week of October, and I should think he might cut from five hundred to a thousand blooms every week during the whole season, and such blooms as few, if any, can come up to.

Mr. Buck, at the west corner of Covent Garden, sells all these flowers and all other flowers which Mr. Bird cuts, which would tingle the ears of country people if I were to mention the tenth part of them.

What would you say to forcing fifty thousand Hyacinths in two months' time, as many Tulips, and ten times more of other bulbs and roots? But I would be afraid of saying how many thousands I had seen there in preparation—there are whole fields of frames and pits full of them ; but I made sure of his system, which is different to ours.

All his Tulips and Crocuses are under glass in cold quarters to save them from mice. These being the only two kinds which they take to, the Hyacinths, Narcissi, and the Lilies, the mice do not touch; therefore, they are placed in beds out in the open yard. The pots are set on the bare bottom, and then a thick covering of spent hops is placed all over the beds. By Christmas the leaves and flower-buds are just out from the bulbs, and the pots are full of roots, then they are ready for forcing. They are taken to stove heat, and set again in the dark along the sides of the flues and hot-water pipes, and a thick layer of spent hops is set over them again, and left on them till the leaves and flower-stems are 5 inches or 6 inches long, and blanched white as the heart of Celery, the heat being from 60° to 80°. Then they are taken out of the hops and set on the stages, and are syringed to clean the remains of the mulching from them. At this stage the heat is kept up to 80° for a few days, and Mr. Bird assured me that in three days in that heat the Hyacinth leaves and flower-stems get as green as grass, and very soon run up amazingly; then the heat is lowered, and they are soon in bloom, and that is exactly how the best and earliest Hyacinths in Covent Garden are raised.

Then of Cyclamens, one would think he, Mr. Bird, has enough for the three kingdoms himself of all sorts and sizes, and his last seedlings in 100 broad pans, and 100 to 150 in a pan, are from seeds ten years old. Mr. Bird says that Balsam seeds and Cyclamen seeds keep good enough for twenty years.

Before I leave them, I may state that the true *Cyclamen vernum* is seeding in my own garden just now. The plant I had was in a bad state when I had it, and I was told it had been so for three years before I had it. This kind makes a gouty spur on the top of the tuber from which the flowers come. No other Cyclamen does so. This gouty spur got blind somehow, and no blooms could come from it; then the tuber made a fresh spur down on the side of it. That spur is now in seed with me, and is a very curious thing in such a family.

Talk about orchard-house Grapes, and then know that Mr. Bird has whole houses on that plan—say without any aid from artificial heat; but like Sir Joseph Paxton, his Vines are all planted out, and the Muscat of Alexandria ripened this season perfectly well, and of the Black Hamburgh immense crops are gathered before it is time to house the Chrysanthemums. The Vine-borders are all above the level of the garden, and are made on the progressive plan of so much in addition every season till it is at the full width, which will take some years yet.

There is another new dodge for getting early Camellia blooms to cut for Mr. Buck aforesaid, by the thousand, and also Indian Azaleas the same. There have been lots of double white Camellia blossoms this last October, so the plan tells soon. It is this—

The large Chrysanthemum-house is 90 feet long and 30 feet wide. Down the centre of this house raised brick-beds have been made for large specimen plants of Camellias. They are 5 feet square and 18 inches out of the ground, the bottom well drained, and yellow Epping Forest loam and a little peat make the Camellia compost, and thus confined and raised the plants are literally one mass of bud bloom. All round the sides of this centre bed are raised peat-beds for the Azaleas, they are 3 feet square and 18 inches out of the ground. Every one of these plants furnishes cut flowers in one season worth four times the value of the plants.

All kinds of bedding plants are done there on the same model. We must never lose sight of the flower-beds, go where we may. But, enough. Let us see, or rather say, what is new and best in the Chrysanthemum line. The most splendid-coloured of all the Chrysanthemums, and the purest in colour, is a new one called Jardin des Plantes. It was out last year, but no one grew it properly. It is above the medium size, the shape is perfect, and the colour is just the same as in our own Buttercups; perhaps the finest yellow flower in Nature.

After it I took the seedlings, which are yet under numbers, except the first, and they shall be named and described after the descriptions I give of them. The first he called Snowball, but I had it altered to one which gives a far better idea of the flower. You might mistake this flower in your own hand for one from a Gueldres Rose in May, so it is to be booked the Gueldres Rose Chrysanthemum, and, of course, every one must have it. No other flower of the race is at all like it. No. 2, A fine thing in the style of Lisias, but a more brilliant colour. No. 3, Most exquisite shape, imbricatingly incurved, light blush colour, and medium size—a lady's flower to the last petal. No. 4, Another medium-sized flower [illegible] Dupont de l'Eure, but different [illegible] thoroughly incurved. No. 5, A seedling Anemone after Pearl, but superior to it. No. 6, A finely-incurved flower of a peculiar colour, purple outside or under the petals, or rather florets, and salmon and something on the face of it. No. 7, A fine incurved flower, creamy white, and above the middle size. No. 8, A medium size, incurved, and sulphur white. No. 9, A large, deep, rich lilac. A shade lighter than globosa stellaris, and beautifully incurved. No. 10, A deeper lilac than the last, and a medium-sized bloom. No. 11, In the way of Gueldres Rose, but an incurved flower tinged with French white, medium size. No. 12, A finely-incurved Indian red, with a golden back to the florets. No. 13, The last on my list, which is a Pompon, of good habit, and a new colour, which I would call a light chestnut, with a very full centre, and free habit of blooming.

Those were all the seedlings which were open on the last day of October. And now for a selection of all the Good Gracious among the old ones. The following dozen Mr. Bird calls "trimmers:"—1, Queen of England; 2, Princesse Marie; 3, Cassandra; 4, Jardin des Plantes, the Buttercup trimmer; 5, Novelty, the largest of them all; 6, Dupont de l'Eure; 7, Hermione; 8, Marshall Duroc; 9, White Formosa; 10, Yellow Formosa, *alias* Webb's Delight; 11, Stellaris globosa; and 12, Themis.

My own turn next, and I insisted on a dozen that you might call lady-like flowers, and such colours as ladies prefer for their dresses. All ladies in all parts of our empire avoid foxy colours, and the colours of any thing one could buy at a butcher's stall, as tripe and such gollops as one meets with in Dahlias and Chrysanthemums. I avoid them all, and No. 1, is Vesta; 2, Miss Kate; 3, Hermione; 4, Alma, as being the reddest purple; 5, Cassandra, the lovely Cassandra, pearly white tinged with purple in different degrees in different flowers; 6, Progne, the *g* not sounded; a pretty dark crimson—that is, Chrysanthemum crimson; 7, Wonderful, the third degree of purple, or best, or superlative purple; 8, Princesse Marie, rather too big for a lady's flower, but I know some very big patterns; 9, White Formosa; 10, Madame Lebois, a creamy lilac; 11, Aimée Ferriere, a pure French white tipped with purple, next shade to Vesta; and 12, Marshall Duroc, one of the liveliest in colour.

Then, seeing so many good ones thus left in the lurch, it struck me all at once why not put up a long dozen for aldermen. Every one knows what an alderman is said to be, and to be like, and also what he likes; and I shall take my chance that all the aldermen on the list would jump at my selection for them. No. 1, Queen of England, of course, colour, size, shape, and loyalty, in one bloom; 2, Yellow Queen of England, to make sure of loyalty; 3, Alfred Salter; 4, Novelty, for the button-hole; 5, Jardin des Plantes, but no politics; 6, Princesse Marie; 7, Themis; 8, Cassandra, for a holiday trip with; 9, Triomphe du Nord, to keep him in mind of the Siamese Ambassadors with their Indian red; 10, Wonderful, for Lord Mayor's day; 11, Prince Albert, for they all like him; and 12, Madame Poggi, for the sake of ancient customs, her madamship being the most ancient of all that is dark, but not dreary, in Chrysanthemums.

D. BEATON.

FORCING HYACINTHS.

IN reply to "M. A.'s" inquiry as to forcing Hyacinths and other bulbs in a Waltonian Case, I fear I cannot give any very safe opinion. It has seemed to me always a rather dangerous experiment, so very often ending in far too much foliage without good spikes of blossom, or in flowers so weak as to be almost worthless. My own bulbs last winter began to be interesting from the buds appearing quite early in December; but they were, as a rule, never forced at all. When the flower-buds, however, have begun to open and to separate around the stem like a very poor attempt at blossoming, three days in a heated case with a flat top, at about 50°, have brought them always into most charming bloom.

My own Hyacinths have also always been provided with a good quantity of finely broken, almost pounded, charcoal. The beautiful little purple Hyacinth-dishes only 6 inches in diameter, advertised by Millington, are quite first-rate for this; the dark-coloured glass effectually concealing the charcoal pavement, while large enough to contain a very pretty and most interesting group. Mrs. Loudon used to recommend watering bulbs with warm water—a plan certainly efficacious in bringing flowers out. But whatever is done should most certainly be done in the last ten days [illegible] for my own part, I always regard with unmitigated regret any increase in the height of bulb foliage. A good healthy six-weeks stock of roots, fed with charcoal from the very first, gives one a fair chance of succeeding with the final ten-days forcing.

The plants should be while forcing in a dampish atmosphere and in the fullest light. The heat should be increased very gradually, and the plants at night should be put in a cooler and quite dark place. Any forcing before the flower-buds begin to show decidedly will probably end in many leaves, few flowers.—E. A. M.

VARIEGATED ARISTOTELIA.

This is a very old plant indeed—the variegated form of Aristotelia Macqui—a dwarf, evergreen, half-hardy shrub from Chili, which was named after Aristotle by a Frenchman. It comes from cuttings and layers just like the Portugal Laurel if the cuttings are put in under a hand-glass at the end of July, or if the layers are made at the beginning of June. But, of course, regular propagators would get it from cuttings all the year round in heat if there were a demand for it, which there never was, as the variegated one is a very touchy customer about soil and situation, and, above all, about frost and sharp easterly winds, which turn the leaves to foxy colour first, and after that kill them right out if they are not well protected. But the right way to do it and its parent, the green Aristotelia, was never generally practised in England. Both ought to be transplanted at the very end of September for the first ten years, and one-half the length of the growth of that summer should be cut back at the time of transplanting.

In a very few years the plants would then be in the same condition as the dwarf evergreens which flower-garden people transplant twice a-year to fill the flower-beds in winter, and to empty them in the spring, and from 3 feet to 5 feet high, and no frost, or wind, or weather would then harm either of them, and both are well worth the trial.

The easiest way for people who have plenty of glass would be to grow the variegated Aristotelia in pots exactly in the same way as they do the variegated Hydrangea, only that the Hydrangea requires much stronger soil, and four times more water than the variegated Aristotelia. Then the simplest thing in the world would be to force it like a Rose from March to the end of May, then make layers of the new shoots all round the sides of the pot, and they would root faster than a Rose.

TANK HEATING.

As it appears from some remarks in your answers to correspondents in The Journal of Horticulture, of October 15th, that the system of tank-heating is just now occupying more than usual attention, perhaps you will allow the accompanying remarks to appear in your most interesting and useful Journal, with a view to eliciting information as to what are the merits or demerits of this system of heating. As I have not yet had any experience in this system of heating, but am just about to adopt it in the warming of a small greenhouse and propagating-house combined, my remarks must necessarily refer rather to what I have read on the subject than to any experience of my own. The advantages of the system as I gather from your excellent little manual, "Greenhouses for the Many," seem to be—1st, cheapness in the erection; 2nd, simplicity in the working; and 3rd, avoiding of danger from occasional neglect or accident (I mean in the water not cooling nearly so rapidly as in pipes.)

The disadvantages of the system are thus stated in a "Treatise on Warming Buildings by Hot Water," by C. Hood. All these plans—*i.e.*, of heating by tanks, have one defect in common with Mr. Rendle's plan, which is the plan recommended in "Greenhouses for the Many." "It is difficult to regulate the quantity of moisture; and by some of these plans, particularly in those where steam was allowed to evaporate in large quantities, there was too much damp for the plants, and by others they were too dry."

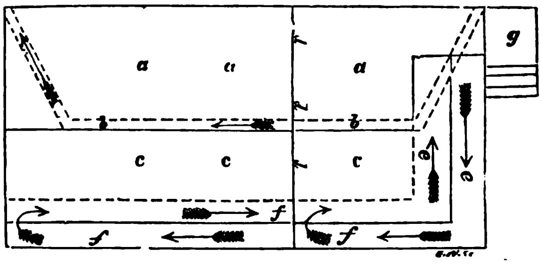
As to the advantages I have spoken of, I find—1st, as to cheapness, that the cost will be from £2 to £4 less than heating by pipes (according to the kind of tank I use) in my small house 20 feet long by 10 feet wide.

2nd, As to simplicity, it is so very easy to test at almost any part of the tank, on the plan I propose to adopt, the temperature either by the hand or by a thermometer; and as there will only be some 4 feet of piping connecting one end of the tank with the boiler, the position of any obstruction to the circulation can at once be detected and removed.

3rd. It is also a great advantage that the water will continue warm from ten to twenty hours after the fire has been extinguished, according to the quantity of water which the tank contains, and the temperature to which it has been heated. Where an amateur has to attend to his house chiefly himself, and where any one desires to avoid, if possible, giving any time or attention to it on the Sabbath—this is, surely, no small advantage.

As to the disadvantage said to belong to the system, perhaps the accompanying ground plan will best explain how I propose in my own case to remove this.

Ground plan of greenhouse and propagating-house, showing system of heating by flue and tank combined.



(*a*) Stage for flowers.
(*b*) Flue.
(*c*) Sunk path 3 feet wide.
(*e*) Propagating tank.
(*f*) Heating tank.
(*g*) Boiler and chimney.
(*h*) Division separating greenhouse from hothouse.

The house I am building is 20 feet by 10 feet, and is divided at (*h h h*) by a partition, corresponding with the ends, into a greenhouse and propagating-house. The tanks will be two joined together. The one for propagating is 8 feet by 3 feet; the other extending along the front of the house, is 17 feet by 2 feet. They will be of wood lined with zinc, 6 inches deep, covered with galvanised iron with sides of wood rising 9 inches above the top of the tank, to contain the sand, tan, or other materials in which to plunge pots. The longer tank will have two openings about a foot long, one in each house, which can be opened or closed with pleasure so as to regulate the moisture of the atmosphere; and, if these shall not be sufficient for the purpose, evaporating-pans will be placed on the flue. It is thus expected that all difficulty as to over-dryness will be obviated. And, as to over-moisture by help of the flue, which, as will be shown, can be used or not in conjunction with the tank-heating, and by closing the openings in the tank the atmosphere may be dried to any extent; and, in winter, by removing the sand or tan from the top of the longer tank, the whole of this may be made available as well as the flue in giving top heat.

There will be a moveable division in the longer tank at the point where the houses are separated, so that when necessary the circulation of water in the tank may be stopped at this point, and the heat confined entirely to the propagating-house.

There will, also, be a chimney going straight from the boiler up the back wall, so that by means of a damper in this and the flue where it joins the chimney, the flue can be used or not as necessary.

The information I ask for is—1st, Is my plan more ingenious than likely to be practically useful, and to meet the objections said to exist to tank-heating? and 2nd, As to the construction of the tank.

Quoting from your Journal of January 1st, page 192, I read, "We have no preference for wood *versus* brick tanks, only we think wooden ones, if well made, are less liable to break; and if well hammered at the corners and joints, and a little red lead put there afterwards inside, and no paint given outside or inside, there is no end to their lasting if made of red deal well seasoned and well supplied with water afterwards." Would not the friction in a tank of wood materially interfere with the circulation of the hot water? or may I gather from this that the zinc lining is unnecessary, as I find the cost of this makes the expense of me tanks about double what they would be without it?

I trust some of your correspondents who have had experience in such matters will criticise my plans and remarks, and give their opinion as to the efficiency of wood tanks without any lining.—Country Curate.

HEATING BY HOT-WATER IN PIPES.

I AM about to erect a small vinery 27 feet long, by 21 feet wide, and should be obliged by your informing me whether one flow-pipe of 4 inches diameter, and two return-pipes of the same will give sufficient heat if carried all round the house. Also, if by dipping the pipes with an elbow to go under the doorway and then rising again, will interfere with the proper circulation of the water. Also, do you recommend the Vines to be planted inside the house and the front wall to be laid on arches?—CONSTANT READER.

[You do not say if your house is span-roofed, or the height. However, that amount of piping will do if you do not contemplate very early forcing; but we advise two flows and one return. You might then so place your boiler at one end, and heat each side separately without interfering with the doorway. Your lowest dip must not be so low as the top of the boiler. We would as well not dip at all, when thus it can be avoided.

Plant the Vines inside, but see the arches are high enough, and that the inside border is higher than the outside one.

If resolved to take the pipes all round, you might place all your pipes level and so low that you could step over them at the doorway thus— OOO. In so doing, let the pipes rise on on one side to the centre of the house some 3 inches from the boiler, and face as much on the other side. One half of the house will then have flow-pipes and the other half the returns.]

THE ROCKERY AND ITS FORMATION.

(*Concluded from page 103.*)

OF whatever material the bulk of the mound may be made of, care must be taken to have sufficient of the proper description of soil on the outside that is to grow the plants intended to be cultivated there. Most of the Fern class like a moist but open-textured soil; and most alpine plants like a soil partaking more or less of grit, but often more dry and open than is requisite for Ferns—in fact, the latter like it moist and shady, although Polypodium and some other Ferns are often found basking in the full sunshine as well. But it would be as well to secure places for both classes of plants different from each other. And by adding a good proportion of road sand to the compost, and covering the heap to the depth of about a foot, almost any description of plants will be found to grow on it; and by the soil being placed there before the stones, the after-trouble of digging out and putting it in will be avoided; and it cannot be so well done afterwards. Having fashioned the face of the hill, bank, or mound into the form most in accordance with good taste, the stones may be arranged, subject in some respect to the following rules:—

1st. Flat stones may either lie flat, or, if on an inclination, the angle not to exceed 25°. Loose stones on the surface may, however, lie steeper, but very rarely let them lie on their edges.

2nd. All large stones to lie on the side having the largest base, for we will always find the circumference of a stone at the ground surface larger than at any part above; also let all such stones have the appearance of being well set in the ground.

3rd. Do not arrange the stones at equal distances apart, like a tesselated pavement; but let huge lumps form a sort of natural quarry, regardless of the places for plants growing, for these can easily be overhung by creepers.

4th. In the formation of a piece of rock like a quarry, select flat stones merely fitting to each other, and place them in succession one over the other as nearly resembling what they are found in a state of nature.

5th. Obtain the largest stones you can for the job, and make the most of them. In some cases a thin flat one may represent a large bulky one by being reared on its side against a shrub, which, by concealing the back, gives the idea that only one side of a cube is seen; but this dodge must never be adopted unless the back can be effectually concealed at once.

6th. When water can be had in a stream running something like fifty gallons a-minute or more, and with a chance to have a fall of 3 feet or more, a sort of a rustic cascade may be formed where the water falls over a ledge of rock and flows away over a pebbly bottom. Or, if no such fall can be obtained, the water may be made to issue from some apparent orifice in the rock; and Ferns and other plants overhanging [illegible] with a good effect may be produced.

[illegible] only a very small quantity with a little fall, let that fall over a ledge of rock from some natural-looking spout into a sort of trough below, and the water in this instance becomes in strict propriety "the well." Avoid all pigmy attempts at jets d'eau, for domes, Lotuses, Convolvuluses, and the whole hosts of artificial forms of playing fountains have no place here; the stream, well, cascade, and such natural features alone being admissible.

It has been explained rockwork cannot well be formed unless in the immediate neighbourhood of trees or shrubs, or on a natural bank already formed; nevertheless, when it is requisite to form one, the planting of such trees and shrubs may be done at the same time; and sometimes banks of rockwork are made to hide unsightly objects, and shrubs being placed on their summits as well as their sides, a good effect is produced. And I would not advise any piece of rockwork to be without evergreens of some sort or other, as Ferns and herbaceous plants look so bare in winter. One of the best shrubs for covering a steep bank is Cotoneaster microphylla; and one of the best instances of its being converted into such a purpose is seen in Birkenhead Park at the head of a lake, where an abrupt bank 12 feet or more high is covered with this trailing shrub, and looks remarkably well. Savin may also be used in like manner; and at Redleaf the Juniperus repens is made to cover a considerable space, but this plant is less plentiful than Cotoneaster and more choice of a situation. However, something or other must be added to the herbaceous plants to give it a clothed appearance in winter.

In giving the above general views on rockwork, I have not mentioned the use of roots and stumps of trees, which are often converted into fanciful mounds or banks on which plants thrive perhaps better than anywhere else, the decaying timber affording that nourishment so much relished by alpine plants, creepers, and Ferns. But roots are, properly speaking, a perfectly artificial affair, and scarcely come under the class of rockwork, that I would hardly advise their being used in conjunction with stone, unless in such a position as will insure of their being speedily covered with some permanent plant. And do not by any means allow them to appear through the foliage, while stones may do so with perfect propriety, and, in fact, it would not be proper to conceal them entirely at any time; but a judicious concealment of their bases sides, and when they lose themselves in the ground is at all times advisable.

Of the class of plants proper for such places, every one has his own particular favourites. In damp, shady places, Ferns are especially suitable; while in more sunny places some alpine plants may feel more at home; but it is, perhaps, as necessary to say here what it is advisable to exclude, as well as what to cultivate; and one of the worst enemies to contend with in a piece of artificial rockwork is the wild Convolvulus, which it would be proper to guard against in the formation of the ground. The common or herbaceous Vinca is also an unpleasant-looking plant in winter, and overruns everything in the growing season; but the narrow-leaved variety is better, and Vinca elegans, the variegated one, is worthy of a place anywhere. It would, therefore, be prudent in planting a rockery to avoid such plants as are likely to be troublesome hereafter; for when once the roots of such plants as Convolvulus and Vinca get underneath and amongst the stones, it is no easy matter to get them out. It is better, therefore, to endure the thin appearance the planting may have for a year or so, rather than plant such unruly plants for a temporary purpose of serving that time. Some annual creepers would do better and be less trouble, taking care, however, that the plants intended to occupy the site be not injured by those robust growers which overtopping everything at the most important growing time, would quickly injure if not kill all beneath them.

In concluding this somewhat long article, I would advise the intending creator of a piece of rockwork, to visit the best-formed feature of the same kind in his immediate neighbourhood, and taking a lesson or two also out of Nature's open and inviting book, he will with the aid of the above remarks be able to see what he ought to do, and, which is of equal importance, what he ought not to do. The Crystal Palace with its extensive flower garden does not present much in the rockery way that is useful to copy in a small place, although the mounds facing the lower ponds contain some useful hints; and tourists and others who wish to see rocks in their primitive state, may see good examples that way at Tunbridge Wells; but I have already quoted sufficient examples, and if I added another, I might say that the public park at Sunderland is formed by the aid of a disused quarry, and the face of it as well as the mounds of débris is worked into good account. But most districts afford some examples of this class of gardening; only, as I before stated, many of them are sadly at variance with everything of a like kind we meet with in Nature, and although in the miniature way in which we attempt to copy that grand original, we have no chance to compete with her best works, let us endeavour to imitate those of a more moderate kind, and, above all things, let us beware of appearing in direct opposition to her.

J. Robson.

COCOA-NUT FIBRE AS A SOIL FOR FERNS.

A correspondent alludes to cocoa-nut refuse as a soil for Ferns: would you kindly direct me how to use it—whether mixed with clay, and, if so, in what proportion?—T. B. Lake.

[The cocoa-nut refuse is the best invention of the day for growing all Ferns which are anywise difficult to grow, and, what is most singular, ten inventors made the discovery much about the same time, and we ourselves have been proving as many cases as we could. We did prove every word to be true, and we sent the proof plants to Mr. Eyles for the Royal Horticultural Society, who is very fond of fine Ferns, and he was astounded at seeing how they rooted all over, and in and under every morsel of the "fibre" as if they never could have enough of it.

It is to be used exactly as peat and sand are used now for Ferns. It is the substitute for both peat and sand, and for very delicate little Ferns nothing else is needed; but for all above the smallest, one-sixth, or one-eighth, or one-tenth of the compost should be the best yellow loam, pounded as fine as it can be made. That would do for the next three degrees of strength of plant; and for very strong Ferns and for hardy ferneries the compost should be one-half cocoa-nut refuse and one half yellow loam, without turf, or lumps, or any sand, and no peat.

This fibre, if the paper makers do not swallow it up, will make a revolution in the growth of fine Ferns, at least so we are told by the inventors.]

GAZANIA SPLENDENS.

I failed again in crossing Gazania splendens and rigens at the autumnal equinox; but the old plants have suggested a way of using splendens, which I hasten to notice, in order that it may have a chance before the frost cuts up the old plants now out in the flower-beds. The older the plants are, the more freely they seem to bloom and the less growth they make, and they make hanging-plants easier than any kind I know: thence, that which suggested itself is this:—

Gardeners down in the country who have much to do in the way of furnishing summer plants in boxes for the outside of windows, and for flats and recesses about houses and castles, have one of the best furnishing summer plants in the country in Gazania splendens, if they would now take advantage of the longest and strongest plants they have in the beds, and which they mean to leave out to the frost. It is a very simple proceeding now; but at the end of next May it would be one of the best moves one could make, and then there will be nothing to do it with unless the best of the old plants are lifted and saved over the winter, for autumn or spring-struck plants of it will be of no use for what I mean—and that is, that a row of such old plants should be first planted close to the outside of the plant-boxes, their heads or branches to hang over the box and to trail down half a yard at once; then to fill the box in the old way, and to tack or nail the strongest of the branches of splendens along the front of the box at the bottom to keep them from being too much shaken by the wind. They will flower most profusely the whole length of the shoots from May to November; mine, out in pots on the window-sill, have not yet done blooming, and they hang down and grow downwards as freely as if they were trained to do so.

I almost blush to say that a box of Tom Thumbs, or of any Scarlet Geraniums, fringed in front with a broad margin of this yellow, would be just in the fashion, and fashion will have its sway; but yellow and scarlet are not the best two colours to place side by side by any law of contrasts. But, certainly, the Gazania splendens is thus the best outside trailer or hanging-down plant I have yet seen tried.

Mr. Kinghorn's plan of having aprons of Nierembergia gracilis in front of boxes of his lovely Christine is very good looking to the sun, and that would be the best aspect for the yellow apron; but the plant is so hardy and so accommodating that any aspect round the compass will do, for Scarlet Geraniums do not look at all well against red brick houses; but for stone, or stucco, or white bricks, nothing is so telling as scarlets and yellow, except one thing, and that thing would suit Gazanias in bloom to the very shade of perfection: the thing is a soft purple with a tinge of lilac in it; and of all the colours of flowers that is the richest against a white background, and the best to contrast with Gazania splendens; always minding that both colours are resting on green, which makes all the difference from the notions of Chevreul, whose book on colours is the very worst for flowers of all the books that ever were printed. The purple and lilac combination you will find in the Unique Geranium; and Rollison's Unique, as it is erroneously called, is one of the very best box Geraniums we have, if you take old plants of it and keep it well down in the box by training. Just try the Unique and the splendens as I say for once, and then try if ever you can give them up afterwards.—D. Beaton.

FRUIT TREES IN POTS UNDER GLASS.

Whether a tree be planted in the earth or in a pot, it requires for its perfect development—1st, Substances containing carbon, nitrogen, and sulphur, and capable of yielding these substances to the plant; 2nd, Water; and lastly, Soil, to furnish it with inorganic matters. In addition to the above, there must be plenty of air and light. If all these be attended to, there need be no fear as to the result.

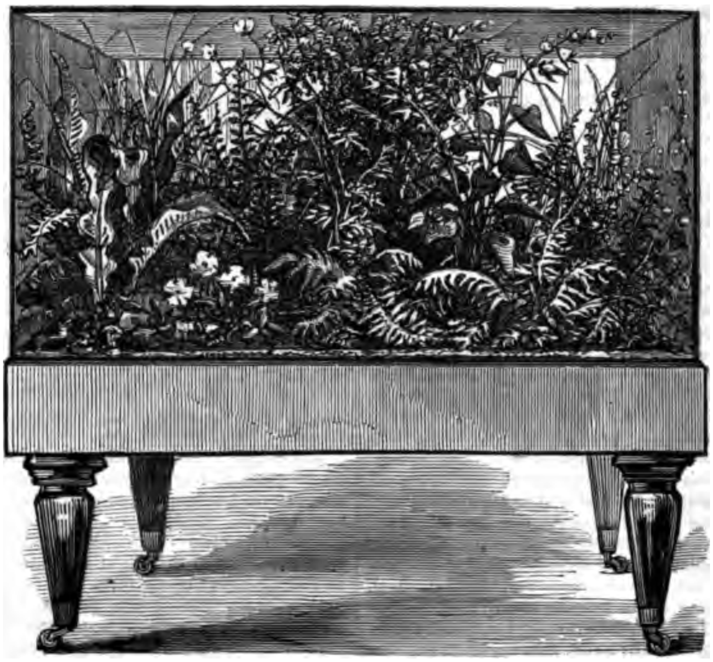
Whatever may be the opinions and experience of persons as regards pot culture of fruit trees, the following facts cannot be disputed; they can be attested by persons far and near. Six years since I purchased of Mr. Rivers fifty Peach and Nectarine trees, together with a few Plums and some Pears; the latter I do not refer to, although I had a very good crop. These Peaches, Nectarines, and Plums were potted and bedded out against a south wall. By the end of autumn the wood was thoroughly ripened, and full of bloom-buds. By the following spring I had built a lean-to house against this wall 110 feet by 15 feet, to be used afterwards as a vinery. I parted off 50 feet, and placed in this the Pears against the wall; the Peaches, Nectarines, and Plums in front.

Now mark this, neither I nor my gardener knew anything of the culture of fruit trees in pots farther than having paid Sawbridgeworth a visit; yet the very first year we had the most magnificent crop, the branches being laden to the earth, the fruit quite as large and as well flavoured as any on the walls. I almost forget the amount of fruit, but I think it was about a hundred dozen.

The ventilation was perfect, and every pot's surface was covered with about 3 inches of rich black compost, the gradual decay of which fed the plants at each meal with a clear solution of carbonic acid, ammonia, disintegrated earthy inorganics, &c. This surface dressing I believe to be half the battle. And possibly at the time to which Mr. Robson refers this method might not have been adopted. It occurred to me, as I dare say it did to many others, on reading Liebig's article on cremacausis—*i. e.*, slow combustion or decay. I seldom recommend liquid manure for the long run; it seems to suit Vines, but is apt to produce surfeit and an excess of raw sap in Peaches and Nectarines. When a dry atmosphere, to assist exhalation, and plenty of sunlight to fix the excess of nutriment is indispensable, shoddy (woollen fibres from a cloth mill) forms a capital slow decomposing layer to place over the surface of the pots to prevent evaporation; and any slow-decaying compost, not likely to get hard and cake, forms a good pabulum above this. I have such a supply of water and such facility in applying it that I am not particular about evaporation. I should think the outside of the pots might be covered with some material better than hay, and something that might act as a nonconductor of evaporation as well as radiation; say boiling coal tar at 2*d.* per gallon, creosote 6*d.* per gallon, or jet varnish 1*s.* 9*d.* per gallon.

We are rather famed for our fruit culture, one gardener carrying off first prize at the Crystal Palace, and at a neighbouring fruit show this season seventeen prizes at once. Is it reasonable to suppose that if pot culture did not answer I should at this time have nearly a hundred fruit trees in pots?—Scrutator.

THE IN-DOOR PLANT CASE.—No. 1.



In commencing a series of papers on the In-door Plant Case, my first endeavour must be to describe these cases, and to say what they aim at effecting. For this I must first glance back at the many endeavours which have at different times been made for enabling those who are fond of plants to grow or force stove or greenhouse flowers, or even to preserve such as they may have bought for a long time in freshness without a proper hothouse.

For stove plants and for forcing, heat was, of course, required, and most of the means that were tried for this proved to be attended by such objections as rendered their general use all but impossible. Gas was required, or a lamp, with oil that might spill, or lights that might go out; and these cases, too, were constructed much too low to enable the cultivator to produce a gay display of plants.

It always seemed to me, however, a certainty that something might be done. It was quite impossible but that a miniature house could be constructed for the little stove plants as well as Crystal Palaces, and enormous buildings for Victoria regias. So while others effected the great, I thought I would try the little; and being myself intensely fond of flowers, and unable for a time to take care of them out of doors, I turned all my efforts to growing them in the house.

These plant cases, indeed, never could succeed till some one had time to watch them day by day; looking out for their defects, tracing those defects to their causes, and endeavouring to remove them as fast as they were discovered, and this could hardly have been done except under circumstances such as mine have been.

These cases are now the simplest to manage that can possibly be conceived; but this simplicity is only the result of at least two years' incessant experimenting and balancing their resources, following also on a whole li[illegible] of gardening, fo[illegible] remembe[illegible] having the care of plant[illegible] and at one [illegible] in [illegible] [illegible] orchid[illegible] [illegible] W[illegible] [illegible] while [illegible] The In-d[illegible] [illegible] sufficien[illegible] [illegible] working [illegible] ford a [illegible] pres[illegible] delight to many who are debarred from all out-door gardening, or who cannot have a large hothouse.

One of my cases was exhibited at Kensington Gore at the flower show there last week; and though the 6th of November is not a good time for flowers, it will give an idea, perhaps, to those who saw it, of the actual grouping, and of the kinds of plants that are adapted for this sort of culture.

Many persons have, also, some particular kind of flower for which they have a very special preference, and as far as my experience goes, most kinds may thus be grown in different degrees of heat, different degrees of air, different degrees of light, and different degrees of moisture. The variation of one of these various requisites often turns the scale, and each can be regulated to any point whatever by the simple use of the simple means provided.

I hope in succeeding details to give a list of plants adapted for such culture, whether stove or greenhouse, or only hardy plants and bulbs to be hastened on; and having begun at the beginning, and so worked up myself, I am prepared by experience for most of the small disasters that befall such florists.

Any practical difficulty that arises in actually working cases, I shall be also delighted to try to meet and if possible to point out a remedy; only I give fair warning that *adaptations* of my system will generally fail, for no one can tell the number of little requisites, proportions, size, make, shape, boilers, pipes, &c., which have had to be considered, and to be put together to make such a structure as may adapt itself to every season equally, and to each style of plant, while being yet easy and simple in the user's hands.

The temperature of these cases may be raised to 90°, going down to 65° in the course of twelve hours. It may otherwise be made to reach 65°, and to fall to about 50°, or it may be kept at the temperature of the room it stands in. Moist stove heat, or dry, warm air, may be also regulated with equal ease and accuracy.

As I keep four cases in full work, one of which acts as a stove and another as a warm greenhouse, I shall hope [illegible] the management and description of the two alternately. My other cases, generally, are kept unheated, unless during a sudden frost, or in a long-continued time of damp or foggy weather.

I think it is very essential for all purposes, to have cases such as may be heated, if necessary. If not warmed for months no injury can arise, but if heat is wanted and cannot be given the consequences are embarrasing.—E. A. M.

A FEW DAYS IN IRELAND.—No. 3.

THE CHIEF SECRETARY'S LODGE, PHŒNIX PARK.

If the Viceregal Lodge be a mile from the entrance gate, the lodge of the Chief Secretary is considerably further northward. It well sustains the characters of *lodge*, being almost concealed on the east side by trees and shrubs. I hardly know how it was, but I had merely a glimpse of the west or lawn-front of the house; that glimpse, however, conjuring up the ideas not of seclusion and retirement, but of exposure, freedom, and openness in the character of the landscape. The scenery of the park, the views of the country adjoining, and the more distant Dublin mountains, all demanding us to lift our eyes from the ground near us and to look further a-field. The very openness in the lawn front seemed to be somewhat emblematic of a distinctive feature in the character of the Right Hon. Baronet Sir Robert Peel, who, as Chief Secretary, occupies this lovely residence. Leaving out of our consideration the great fields of politics and social amelioration and advancement, in which, we doubt not, suitable openness and activity will be displayed, signs are already appearing that the farm and the garden will receive a portion of that energy and taste which we hear are rendering Drayton Manor illustrious for what is beautiful in Nature, and classical and refined in art.

In front of the mansion we just noticed a number of flower-beds well filled, no doubt; but though we were not near enough to notice the arrangement, we could not help wishing that in such a place they were either swept away and their place occupied by the green grass, or a few choice shrubs; or that if flower-beds there were to be, they should be comparatively few in number, and sunk so much in a panel as not to be seen until you came near them. This latter plan would be particularly desirable if there was an invalid in the house that could not well go further to see flowers growing—in fact, in such a case, we would break down all our prepossessed ideas as to fitness, and have flowers anywhere and everywhere, so that their soothing influence might be seen and felt.

Some people act as if thoroughly convinced that a flower-bed, a rustic basket, and an artistic vase can never be placed wrong in a garden: hence, it is no uncommon thing to meet with a flower-bed marring some beautiful scenery, or destroying the effect of a beautiful tree because you cannot see the base of its column or bole. Or you find a beautiful Italian vase perched in front of a rustic-root summer-house, or you find a mass of roots and flints thrown up in front of a Grecian mansion! Would that some one of undoubted taste and commanding influence, would tell us when, and when not, flower-beds should be placed close to a mansion.

If not deceived in our glimpse, the very reasons that told in favour of the flower garden at the Viceregal, told against it here under present circumstances. Two we will mention, keeping in view the objection above stated as to invalids. The first is, that we can hardly fix our attention upon the beauties of the surrounding scenery, and upon flower-beds so placed on an open lawn, without any background near at hand, at one and the same time. Nay, that the very attempt to do so breaks in not pleasantly but harshly on the unity of expression; and thus one form of beauty is led to impair instead of to enhance another distinct and separate form of the beautiful. The second reason is, that too much of one form of the beautiful, clustered near together, tends to produce a feeling of satiety, and thus far lessens instead of promotes enjoyment. Something like a hundred yards from the mansion a nice gate opens into a nice walk in the kitchen garden, so wide and so long, and so rich in colour from very wide ribbon-borders at the sides, that the open beds near the house must be very fine indeed not to lose by comparison, and be altogether forgotten until the visitor or the resident returns to the house again. Were the distance between the beds and the ribbons greater, and that space peculiarly enticing from objects of the rare and attractive in sylvan beauty, the contrast and comparison would not be so rudely thrust upon us. After all, however, so long as the kitchen garden is thus made so ornamental, the flower garden at the house will never be a telling feature until its beds are more attractive than the massive ribbons, and it is either shut in from the view of the park, or treated in some distinct and separate way, as a panel, to look as well in winter as in summer.

We met our new friend, Mr. McNeill, the talented gardener, near this gate, having had a Paul Pry peep over the kitchen garden before we had the privilege of finding him. The kitchen garden seemed much smaller than at the Viceregal; and, on expressing our surprise that so much space could be devoted to flowers, Mr. McNeill told us that they could get the coarser vegetables at the farm. The ground, however, was well cropped, and we noticed in particular that the Celery here, and elsewhere, was very forward, and earthed high up in Ireland. There seemed to be no end to the ribbon-borders. Much the same style of planting was adopted as at the Viceregal, with the addition of separate and distinct groups at the corners; and crosses and stars very nicely and tastefully done. The number of plants wanted must be immense. The kitchen cropping being shut out, the whole looks almost like a rich flower garden. We seem going back to olden times, when the walks in the kitchen garden were bounded by espalier or trellis, and a flower-border in front of them. These mixed borders were well enough in their way, but for massive effect could bear no comparison with the ribbon in its glory, though the glory be but shortlived. The rows here, as well as at the Viceregal, were clear and distinct—not so close perhaps as some of us would wish, though having peculiar advantages.

Ribbons are even more general in Ireland than in England, and there is one thing in which, with one or two exceptions, all we have seen would be improved, so far as we think, though as a mere matter of opinion, other men may with propriety think and act differently. The improvement in our opinion would be the having the borders sloping regularly from back to front, if to be seen on one side only. In these and other wide borders we have seen, the back rows are tall, to blind what is behind them in the way of the purely useful—consisting of

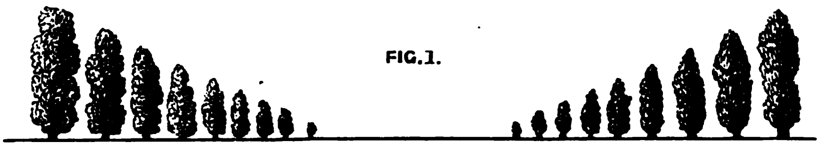


FIG. 1.

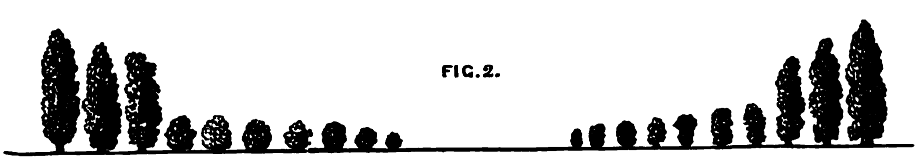


FIG. 2.

Sweet Peas, Hollyhocks, Dahlias, &c.; but some four, or five, or more rows next the front are more uniform in height, and, therefore, present almost a level surface to the eye, which we know some people like not only in ribbons but in beds. The lines of colour are equally well seen when looked at from either end, but we do not think they are so well seen as you walk along by the side of them; and more room is required to keep the line of colour distinct than when on the slope. This is no new idea of ours; for some years ago, when giving a kind of review of Shrubland, and noticing the ribbon-border, which, backed by evergreens, and having on the other side of the green drive a steep romantic bank, was yet as level as a level could make it, we could not help thinking that the colours would have been more telling if the back lines had been the highest, and the front the lowest. *Figs.* 1 and 2 will give a rough representation of what we mean; even if the lines sloped more than in *fig.* 1, the different rows would show more as you went along the walks, which is supposed to be 10 feet wide, and the borders 15 feet. *Fig.* 2 is something like the way the ribboning is done at the Phœnix Park, and we know it will have many admirers. There is no need to illustrate a wide flat border, because a Strawberry-bed in flower would show that well enough. Our own opinion is, that very wide flat ribbon-borders are a waste of energy, as the distinctive markings of the lines are apt to be lost. This is not so likely to be the case with borders planted as *fig.* 2, because the higher lines at the background reflect the light back on the lower level ones in front.

Of course, a sloping bank could be made of plants somewhat similar in strength if the ground was first made sloping. *Fig.* 4 is on the supposition that the plants are selected for their different rows, according to their natural heights; and here lies a little difficulty, as some plants will not grow equally strong every season, and, if a line—say near the centre, was unduly depressed, it would spoil the effect of the whole. Some friends also complain that when the suitable heights are secured, the rows can hardly be kept distinct; but there will be little difficulty with this if stout sticks are put in as thick as a finger every two yards, but out of sight, and connected with small thread cord to keep the rows from intertwining and mingling with so much that is magnificent in these ribbon-beds. We should like much if Messrs. McNeill and Smith would try a small border sloped to the Box next season, and give us their candid opinions of the two systems, for after all we may be wrong in this matter.

Of course, what has been said has chiefly reference to ribbons made with straight lines, or at least lines parallel to the walk or the boundary; but the same principle will apply to ribbon-borders, with winding lines along the centre, but straight lines at the sides to suit the straight walk, if straight it be. The same gradation as to height will also apply to what are called spotted ribbon-borders—for instance, when the ground colour may be Variegated Alyssum and raised spots on it of blue, orange, scarlet, and purple. The highest spots should be farthest from the eye if the border is to be seen on one side, and in the middle if seen on both sides. Considering the immense quantity of fine ribboning here—so much as would surprise many English gardeners, I just throw out these ideas, and leave them to make their way if deserving of consideration.

Besides these fine ribbons I noticed beds of fine Stocks, and splendid China Asters, and some wonderful flowers of a very dwarf kind, the stems only a few inches above the ground. Everywhere the greatest neatness and cleanliness prevailed, there being a place in the reserve compost-ground for rubbish of all kinds, and none to be seen anywhere else. It was evident that there was an honourable and friendly rivalry between these artistes of the Phœnix. Here again I met splendid plants of Chrysanthemum trained, and, I believe, cultivated in the same way as referred to the other week; and which, before they are in bloom, it would puzzle most people to say which were the best, if even then. Some of the plants in the middle of September were from 4 feet to 5 feet in diameter, and the mass of firm shoots scarcely 15 inches to 18 inches in height. Pelargoniums, too, were splendid, one fine house full of large plants, and plenty of smaller ones elsewhere. The larger plants were [illegible] 3 feet to 4 feet in diameter now, and would be at least [illegible]ot or 18 inches more in May and June. I rather think [illegible] of th[illegible] had bloomed this season, but were treated much [illegible] mentioned the other week. The shoots were [illegible] ength all over the plants, and the leaves told of [illegible] highest healt[illegible] hough at this [illegible]ason not too [illegible]

rings, and not a stick of any kind used, unless the two that crossed the pot to support the circular ring.

Besides these Geranium-houses and some frames there was only two small plant-houses—one with two wings and a circular domed one for its centre, which might have done very well if the wings had been of any size; but being mere names or makeshifts from being so small, plants could not be expected to do well from the constant variations to which they would be subjected; one great advantage of a good-sized house being the somewhat equability of its temperature as compared with a small one. The other house was a small lean-to, where as we entered, the wind being boisterous, a fine plant of Acacia Drummondi was thrown down, as the pot in which it grew was standing on another too small to meet the force of the gale. Notwithstanding these disadvantages, remedied in some degree by the opportunity of placing plants in the forcing-houses (to which we will presently allude), it was very pleasing to meet, not only with a good general collection of flowering plants for winter and spring—as Camellias, Azaleas, Primulas, Cinerarias, Euphorbias, Justicias, &c., but a number of very fine specimen plants, which, though not wonderful for size, were beautiful for their compactness and high health and vigour. Among these we noticed fine plants of Rogiera cordata, Adamia versicolor, Cyrtoceras reflexa; Allamanda Schottii, 5 feet by 4 feet; Cyrtanthera magnifica, 3 feet by 3 feet; Heboclinium ianthinum, 4 feet by 4 feet; Medinilla magnifica, 4 feet by 3 feet; Stephanotis floribunda, 5 feet by 4 feet; Posogueria longiflora, 5 feet by 4 feet, very fine. A fine plant of the handsome-foliaged Agnostis sinuatus was showing bloom, supposed to be the first time it has bloomed in Ireland.

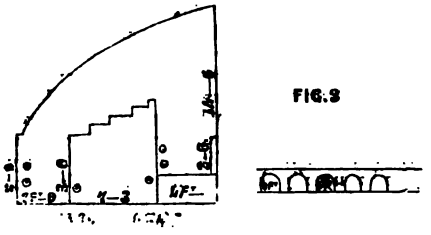
Among fine, young greenhouse plants, Heaths, Pimeleas, Epacris, &c., the following were, perhaps, the most beautiful specimens:—Acacia Drummondi, 4 feet by 4 feet; A. grandis, 5 feet by 4 feet; Acrophyllum venosum, 3 feet by 3 feet; Adenandra, of kinds, such as fragrans, speciosa, uniflora, &c., averaging 3 feet by 3 feet; Eriostemon buxifolium, 3 feet by 3 feet; E. cuspidatum, 5 feet by 4 feet; Erica Cavendishi, 4 feet by 4 feet; Pimelea Hendersoni, 3 feet by 3 feet; P. decussata, 3 feet by 3 feet; Rhyncospermum jasminoides, 5 feet by 4 feet, &c.

The sight of the back settlements would have done some of our grumblers good, who never can get a place for anything, as they would find that even under the shadow of royalty here, many a makeshift must be made. Fine young plants were standing under the protection of old, ricketty, worn-out frames; and as we understand water is a little scarce in the park, some of the best compact greenhouse plants were half-plunged, or more, in ashes, in a bed, and by posts and rails back and front the means were provided for placing some old sashes a yard or more above the plants, so that whilst they had a free current of air all about and among them, they would still be protected from the soakings that drenching rains would give. The force of the sun's rays could easily be blunted by dulling the glass when desirable; though most of the old glass would be dull enough for anything. It is often to places like this that we must go to learn to make the most of everything. "Never be beaten, never give up," should be the watchword of the gardener.

All kinds of small fruit had been plentiful and good, but like as with us Pears and Apples were scarce, though the latter was pretty fair, if we may judge from the best part of a bushel lying on a walk, which the gale of that day, the 13th of September, had rattled down. The wall trees seemed in excellent order, and a high Peach-wall pre-eminently so. It did one's eyes good to see them, for such a crop of fine fruit even then left we were not privileged to see this season, and on looking over the wall we could see the knobs from which many fruit had been taken. We regret that there and then we did not get from Mr. McNeill all the minutiæ, and whether he covered or not, and how if he did. We have no doubt that when he sees this he will tell us all about it. Such Peaches out of doors have been a rarity this season; for elsewhere they seemed as scarce in Ireland as in this neighbourhood.

The great proportion of tender fruits, chiefly Grapes, are grown in a long range of iron curvilinear houses, of which the enclosed (*fig.* 3), is a simple section. I forgot to ask if ever the houses had been used for Pines, for they would answer admirably for the purpose, as from having pipes below the beds there would be no want of a regular bottom heat. The section shows represents shelves in the bed; but in some of the houses the [illegible] earth to keep the Vines from damping, and e given to understand that after a lot of clinkers, &c., above ies, fermenting matters could also be introduced if deemed ble. In such beds we can well conceive the lots of under-

FIG. 3

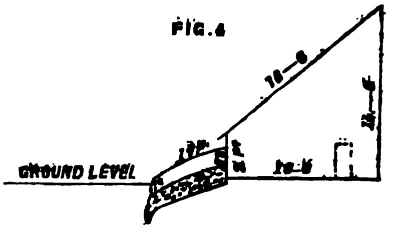


as Dwarf Kidney Beans, or even of Cucumbers and s if deemed desirable. In some of the houses where the were cut or not quite ripe, we found numbers of plants and in excellent health, and for these and whatever may wn in the season beneath the Vines, a good chance is given, rods of Vines were about 6 feet apart. Mr. McNeill com- l of the Chasselas Musqué cracking, but the later Vines l every sign of coming to first-rate perfection. There wo peculiarities in these houses. First, by rising a couple e steps at the doorway, the back path is sufficiently d to enable a person to work in the bed coveniently. The feature is, that without greatly encroaching on the width back pathway, and by means of arches in the back wall, a pit is made at the back, in which the Musa Cavendishii n nearly, if not altogether, the whole length of the range, s producing some fine clusters of fruit. Asking if any uld be applied below the roots, Mr. McNeill shook his the negative, as much as to say, "I wish I could get it." derstood from another quarter, that in these regal gardens rent expenses and what little alterations it may please them e, are defrayed by those holding office for the time being ; at for all large alterations and improvements, an applica- ıst be made to the State for a grant, and there is generally so ircumlocution, and circumbendibus, and circle-go-round- and, without coming to a practical decision, that unless ne great object the trouble and worry exceed the age.

re closing this gossiping letter, we must notice one more vinery in front of Mr. McNeill's cottage, where the , chiefly Black Hamburghs, were very fine and as black ll coloured as they could be. A section is given by Mr. ll's kindness. *Fig.* 4. The Vines grew well enough and ed good bunches and berries, but were deficient in colour on to shanking. The remedy applied we cannot do better ve in Mr. McNeill's own words. "My predecessor having a large drain 4 feet deep along the front of the border, I ly to take out a cut, 4 feet deep, the whole length, then eel forks work up to the front wall, pegging back the roots vent on, and taking care to keep them moist by rolling damp moss as each Vine was disentangled. We took his way some half-a-dozen of Vines at a time. We then ghly drained the bottom, giving it a good slope to the lrain, and then placed over it some 18 inches thick of ts and rough lime rubbish. On this we put 6 inches of ne rubbish rammed hard, and on that a layer of fresh assy side downwards. So much for drainage. Having good compost for 20 inches deep, over that we spread Vine roots, raising all the points a little to allow for , and over them put about 8 inches more soil, so that the when finished had about 28 inches depth of soil. This work was done in February 1858, and ever since we have had good crops of finely-coloured Grapes, and no shanking." The mode and the results speak for themselves.

R. FISH.

FIG. 4



MUSHROOM CULTURE.

PREFATORY REMARKS.

FOR several years past my "better half" has been putting the question to me, "Why do you not instruct John (the man we call our gardener) how to grow Mushrooms. You know very well how they should be grown ?" I have been accustomed on such occasions to state in a hesitating manner (my conscience all the while upbraiding me, and saying as plainly as possible, "you know nothing about Mushroom growing,"); that I would "see about it." I did on such occasions see very plainly that Mushroom growing was no joke, for on looking into those ponderous volumes of McIntosh, into the one heavy volume of Thompson, into various Numbers of THE COTTAGE GARDENER, into Loudon — in short, bemuddling my brains to an enormous extent, I found so many ways of getting to the end, that my resolution failed me, and instead of trying some of the methods recommended, I relapsed into a pleasant apathy, and thought, without even making use of my convenient phrase, that I would see about growing Mushrooms when I could make up my mind whose method of growing them was the best. Well, I did not see about it, and I did not instruct John how to make a bed, till, I think, on the 18th of last May I saw in a contemporary an account of a visit to the gardens at West Hill House, Highgate, and a short description of the method of growing Mushrooms there. I promptly wrote to Mr. Young, the gardener there, to clear up a point or two, which he at once did. I have had perfect success, and have for some weeks thought of giving you in as short a space as possible how and what I have done. A useful article on Mushroom growing in No. 32, but of the same lengthy, vague character as those given by most gardeners, has determined me to condense in as few lines as possible, how I grow Mushrooms.

MY BED, AND HOW I MADE IT.

About the 20th of June last, I gave orders to my groom to save a one-horse load (say twenty bushels) of droppings from the stable, and to take out all the long pieces of straw, leaving the short pieces mixed with the droppings. This load was placed in an open shed in case of very heavy storms coming on to saturate it. I then bought from the gatherers twenty bushels of droppings from the road. This being mixed with sand checks the too rapid fermentation of the stable-droppings. This I mixed with the above, and formed it into a heap like a haycock. Fermentation, as the doctors say, "supervened," and on the 28th of June I reckoned my materials ready to make my bed.

I fixed upon my cellar as the place to make it in. This being dry, light, and, for a cellar, moderately airy, temperature all the year round from 50° to 57°, I had a bottomless box prepared, made with inch boards, 7 feet long, 4 feet wide, and 20 inches deep. Into this I had my forty bushels of horse-droppings placed, hammering them down with a rather heavy mallet as they were emptied into and spread about it. The surface was then levelled, a thermometer placed just under the surface, and the bed left. On the 6th of July I found the thermometer down to 70° (it should not be lower than 70°, nor higher than 75°). I then took half a bushel of good spawn—mine was the Milltrack—and planted it in pieces from about 2 inches to 3 inches in diameter, and 1 inch thick, poking it in just under the surface with my fingers. I then took some light mould, not dusty, but rather dry—it was refuse pot mould sifted, and spread it over the bed 3 inches deep, hammering it down with a heavy spade, so as to make the surface quite smooth, hard, and level, and the depth of mould thus pressed down was about 2 inches over the spawn. About the end of July the Mushrooms began to appear, and ever since the middle of August this small bed, 28 square feet, has given enough not only for the wants of my house, but enough for my neighbours. The bed is at this moment crowded with Mushrooms of all sizes, the small ones are so thick that they look as if white Mustard seed had been strewed over the bed. Any one with a cellar not too damp, or a shed not too airy, may grow Mushrooms in boxes of the depth given as above. A box 6 feet long and 3 feet wide would give a great abundance, and, I believe, that no uncertainty in their culture exists, if people will do as I have done.

It will be seen that no covering is used, and what a nuisance it used to be to have to remove the covering of hay before you could gather a few Mushrooms. I have watered my bed three times since it was made, for I found the surface getting quite dusty in August. I gave it each time about three gallons of water, warm (temperature 90°), sprinkling the surface with a fine rose.

I can tell your readers that a Mushroom-bed placed as mine is, in a light, dry place, is most interesting, and the flavour of Mushrooms thus grown without covering is most delicious. I have never eaten any equal to them.

REQUISITES FOR GROWING MUSHROOMS.

1. A bottomless box 20 inches deep and from 3 feet to 4 feet wide, and from 5 feet to 7 feet long. If your wants are great, have more boxes.

2. A dry cellar with a minimum temperature of 50°. This will do for a crop all the year round. The temperature of my cellar is now 51°, and the Mushrooms are growing freely.

3. In default of a cellar, a close shed with thick walls either of brick or stone, in which the maximum temperature in summer is not more than 60°. A place of this kind will do for Mushroom culture in spring, summer, and autumn, but not for the depth of winter.—AGARICUS.

BLOOMING TACSONIA MANICATA.

AT page 31, Vol. XXV., of THE COTTAGE GARDENER, Mr. Beaton offers a donkey to "the first who will show him Tacsonia ignea and T. manicata in bloom."

If no one has hitherto claimed the donkey, I can claim half of it by showing Mr. Beaton T. manicata in bloom. The flowers are about the colour of T. mollissima, but single. It is growing at the east end of a small conservatory, where in severe weather the temperature is never above 40°, and last winter was often below 30°. It has been grown chiefly for its beautiful foliage, which is always clean. Neither red spider, green fly, nor thrips will touch it. I have sometimes used its leaves for garnishing dessert.

The cause of its blooming I take to be this: Two or three of the largest and strongest shoots were trained some 12 feet or 15 feet beyond the usual limit, to cover a bare rafter, but without the least idea of making it bloom. These shoots were allowed to grow unstopped until they were rather wild. When, contrary to my expectation, about the middle of August it showed bloom and has been blooming ever since, but it is nearly over now, November 1st.

When done blooming I intend to prune it back very severely, and will train some outside next year; but no stopping. It is very vigorous. Would Mr. Beaton recommend root-pruning? —LARIX.

[No. Never root-prune a Tacsonia after it comes to a blooming mood, or rather after undergoing your own most judicious way of growing it. If all would exhaust climbers of all kinds by long growths and no stopping or shortening of the main shoots at winter pruning, they would all bloom, Rose climbers among the rest. Mr. Beaton would rather not cut a donkey into halves, but wishes "LARIX" to make haste and let us see the flowers of Tacsonia ignea also, and then he shall have the donkey —the very one Mr. Judd refused.]

SALT AS A MANURE TO PEACH TREES.

IN your Number of May 14 is an article on the culture of the Peach, from the pen of Mr. Robson. He there gives his opinion that salt may be used as a manure for Peaches and Nectarines to considerable advantage. I propose adopting his recommendation for my Peach trees, and should be obliged with a little advice upon the subject, which may be useful to other subscribers to your Journal.

My Peach-house is 30 feet by 12 feet, the trees are trained on wire trellis parallel to the glass. They have been planted about six years and have succeeded tolerably; there was no border made for them, nor has the soil been renewed or manured. The natural soil of the garden is a black mould about 2 feet [illegible] of the oolite formation.—A SUBSCRIBER.

[illegible] of those convenient manures which can so easily [illegible]smitted into the system of the tree during the growing [illegible], it is best only to apply it then. But, as you say your [illegible] advisable to give them some well-rotted manure in the present autumn, and two or three times during the growing period scatter some salt over the ground which their roots occupy, it will find its way down to them; be careful not to give them an over-dose. If its appearance be unsightly, cover it a little; but it need not be buried deep, as it will be sure to find its way downwards. We have never weighed the quantity we use, but if the ground was scattered over about in the same way that weeds are destroyed in walks with the same material it will be ample—it is better to stop short of the quantity than overdo it. But if your trees show evident signs of going backward, examine and renew the soil, giving them fresh earth without manure, and we think by your description of it that it will be pretty good—a dry chalky soil is usually the most inimical to the Peach. Stiff loams, if not resting on stagnant water, are generally good; and the dark loams of many of the central counties produce excellent fruits.—J. R.]

WINTERING LILIUM LANCIFOLIUM.

RECENTLY you recommended the pots of this Lilium to be plunged in the borders all the winter. Would you advise me (situated as I am in the south, and not many hundred yards from the sea) to plunge my pots in the border (placing a piece of slate for the pots to stand upon)? Would you also advise me to cover with straw or litter?—J. BLACKLOCKE.

[Unless they were in the hands of first-class gardeners, the Lilium lancifolium, or what are called Japan Lilies, are far more safe out in the open borders of the garden, and if in pots, the pots to be plunged out of doors from November to March, in all parts of the British islands, including even the Orkenies, beyond the Pentland Firth. But very few in all these islands know how a bulb-pot, or a pot with any half-hardy, or any delicate-rooted plant, should be plunged, except he be a gardener, and a good gardener too.

To put a slate under a plunged pot in winter, or a piece of board, or anything, in fact, would be ruination to a thousand kinds of plants. The right way is to open a small trench in an open part of the garden, and let it be just 4 inches deeper than the pot, or pots, and only as wide as the mouth of the pot, or a little wider. In the bottom of that trench, at one end, lay down two flat brickbats, flat stones will do—so close that the pot is suspended between them—then the bottom of the pot hangs in the space between the supports, and no worm can get in, and the drainage, the main thing, is thus most perfect. Put in two more bricks or flat stones to support the next pot, and let the rim of it just touch the rim of the first pot. Do all your pot bulbs in that way, and the surface of the row, or rows of pots, to be just 1 inch lower than the rest of the ground. Only 1 inch, recollect. As long as the weather is mild leave them so, but when you know a change is coming draw a ridge of soil over the pots. The ridge should be 18 inches wide at bottom, or across the pots, and 9 inches high for the smallest size; but it may be a yard high, and twice that across the bottom, if one likes, and has materials to do it with. Old tan, or sifted cinder ashes, or sawdust, are just as good as the soil for the ridge. When the weather opens in the spring, open the ridge and see how they look, and put a couple of inches deep over the pots again, and they may remain there till the plants are in bloom.]

COCOA-NUT FIBRE REFUSE AND ITS USES.

I LIVE near a cocoa-nut mat manufactory made of yarn which is spun in India from the filaments of the outer coat of the husk, and I am told that none of the fibre is spun into yarn in England, or imported here.

In using the yarn for the matting there is some waste of the fibre from the friction, and also from cutting the surface of the yarn to obtain an even surface of the mats. These trimmings form a light mass of fibres about 2 inches to 3 inches in length, and the waste from the friction is of a more dusty nature.

Will you inform me if these are the articles referred to by Mr. Beaton as being so useful for mulching, and for growing [illegible] in? Is it not likely to be a good thing for drainage over [illegible] instead of moss?

I found it very useful in protecting the shoots of young Potatoes from the frost, by placing a handful over their [illegible] when just coming above ground. It is so light and elastic [illegible] the shoots readily rise through it. I also used it round the [illegible] of Tea Roses against a wall covered over with cinder ashes, and I did not lose one of those Roses.—Cocoa Fibre.

[The outer coat, or husk, of the shells of the cocoa-nut are pounded into dust like sawdust, in order to separate the fibres, just as the stalks of hemp and flax are done to obtain their fibre. That sawdust-like stuff is full of broken bits of the fibre, and that is what is good for Ferns, and Palms, and bulbs, and all bedding plants, and all plants for the kitchen pot, and also the best thing, perhaps, in Nature to bring alive and make to flourish old Orange trees and old Camellia trees that are already three-parts dead, to all of which we have had abundant proof. The mat makers, therefore, can have no cocoa-nut refuse, only the refuse of the cordage which is spun where the nuts grow. That refuse is the best of drainage stuff for pot plants, and with a little tuft of it over the hole there is no need of crocks at all. That stuff is also the best thing for plaster instead of hair; also, the best thing to put between a hotbed of dung and the soil, or leaf mould over it, and the very cords of which they make door, and passage, and tramp mats, is the very best and cheapest thing near large towns to support Scarlet Runners on. Against division walls put a row of nails 6 inches apart along the bottom of the wall, another row as high as you can reach, cut the cord to that length between the lower and upper nails, and run a length from nail to nail. Keep it dry in winter, and it will last seven years, perhaps fourteen years.—D. B.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

The storing of all keeping roots to be completed. Trench and manure ground where any is vacant. Collect leaves for covering Sea-kale. *Artichokes*, immediate protection to be given to the roots, if not already done; in some situations it may be unnecessary, but it is best to be on the safe side. We have known a whole plantation to be destroyed by frost in what was considered to be a very favourable situation, and where it was thought quite unnecessary to protect them. *Cabbages*, all that are sufficiently advanced to admit of being earthed up should have it done before severe frost sets in. Red Cabbages for spring use may still be planted. *Cauliflowers*, those now producing heads are very valuable, therefore, the greatest care should be taken to preserve them from frost, either by digging them up and planting them in frames, or pulling them up and hanging them in a very cool shed. Protect from slugs the young plants under hand-lights or in frames. *Endive*, transplant as many as possible into frames where they may be at least protected from rain. Sudden frost succeeding the late heavy rains will more injuriously affect advancing salads than any other possible circumstances of weather. *Radishes*, these are sometimes required the year round; where this is the case, it will now be necessary to sow on a slight hotbed; after they are up, air to be given at every favourable opportunity. If they are sown immediately they will be ready to draw by the end of January. *Rhubarb*, a few old roots may be taken up, and planted in boxes or pots, which may be placed in a Mushroom or forcing-house, where the heat is about 60°. *Small Salad*, keep up a succession by sowing in boxes about twice a-week.

FLOWER GARDEN.

Where the principal part of the flower-beds are now empty, let them be well turned up to the bottom, and if much exhausted the application of a good dressing of leaf mould will be found the most suitable restorative for this department. The introduction here of strong manures has generally a tendency to do more harm than good by causing an over-luxuriance highly unfavourable to the production of bloom. Protect the roots of the Tea and Perpetual Roses and Fuchsias with a coat of wood ashes. The Roses and half-hardy climbers against walls to be pruned and nailed before being covered up; but while the weather continues mild, the longer they are exposed the better. The planting of bulbs of all kinds, if not already done, should now be finished as soon as possible. The planting of all kinds of hardy trees and shrubs may now be advantageously proceeded with. Grass lawns and gravel walks to be constantly attended to, or otherwise they will soon become unsightly. Take up the Dahlias as soon as the tops are frosted; do not clean too much soil from them, it will prove a protection when dry.

FRUIT GARDEN.

It is now a good time to take up and root-prune such trees as are growing too luxuriantly to wood without producing fruit Let a wide and deep trench be opened at a proper distance from the stem, so that a man can work with freedom standing on a level with the lower roots, he will then find less difficulty in undermining the tree. As the smaller roots are cleared, they should be tied in bundles to the larger to prevent their being bruised, and to be out of the way of the workman. When the tree is taken up the large perpendicular and bruised portions of any others to be cut clean off. Replant as soon as possible. Raspberry plantations may be cleared of the dead canes and superfluous wood; the suckers to be taken off, and, where required, the strongest to be at once planted for succession. Fig trees to have some dry fern or spruce boughs nailed over them to prevent injury from severe frost; though this is less likely to occur this season than any we remember, as, from the fine light and warm summer we have had, the wood of every description of trees is well ripened, and, consequently, will resist the effects of severe weather with greater impunity; whereas, if ill-matured, it would suffer severely. If we may venture to predict, we should say that next season would be more than usually abundant in fruit of all sorts.

STOVE.

Let such of the Orchids as have completed a good season's growth, and which are somewhat inclined to be deciduous, sink gradually into repose. Those evergreen kinds, as some of the Dendrobiums, the Ærides, Saccolabiums, Vandas, &c., on blocks or in baskets to be loosened a little from the roof, if too near, in order the better to escape the vicissitudes of temperature to which that situation would expose them in winter.

GREENHOUSE AND CONSERVATORY.

Look regularly over the plants, and remove all decayed and decaying leaves, and keep everything sweet and clean. Watering to be given with care, they should have no more moisture supplied from the watering-pot than is sufficient to keep them from flagging. If the house is free from damp, no artificial heat will be required until danger from frost is actually apprehended; but take care that the heating apparatus is in such order that it can be instantly used, as the necessity for it may be daily expected.

FORCING-PIT.

Keep up the supply of all kinds of bulbs and the usual shrubs, and other plants required for winter decoration.

PITS AND FRAMES.

All plants intended to be wintered in these structures to be finally arranged as soon as possible. W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

We had a heavy fall of snow on the 2nd, and a sharpish frost on the evening of the 3rd, and morning of the 4th, which has rather impaired the beauty of all outside ornament. Had not thrown earth round the stems of Dahlias many days too soon. As soon as the snow was over on the 2nd, whipped up all the Cauliflowers at all forward, and secured them in a shed. Turned over on their sides a bed of young Cauliflowers just beginning to show in an earth pit, and brought all others beginning to button and put them with good roots in the same place, where protection can be given them. Put straw ready to cover *Radishes* outside on a bank, and made up a bed of litter and leaves, and sowed the first bed that will have heat to assist them. The bed was about 24 inches high at back, and 18 inches in front, and would not produce much heat as the materials had been previously used; but the height of the frame would permit of a good lining of dung, and leaves being put against it in winter when the Radishes might need a little to make them crisp and short; the Radish being one of the few things that are generally better when forced than when grown in the open air. Protected the Dwarf Kidney Beans in turf pit, still bearing nicely, and removed those in pots into a pit where a little fire heat could be given to them. Regulated Cucumbers, which we intend to keep a little longer for a party, and then, most likely, will destroy them, as we find that hardly any visitors will look at them in winter. Took up some Lettuces fit for use, and placed them under glass protection in an earth pit. Put slates and tiles over Endive to blanch them, and would have taken means to protect them too, but the frost is all gone, and plenty of deluging rains have come instead. Swept over Mushroom-beds with a hair-broom, and sprinkled the surface with a little fresh hay, and have generally plenty, though the fine dried horse-droppings form a small part of our dung compost—in fact, I use almost anything to give a little heat to start with, and use horsedung chiefly for surfacing, to insert the spawn in.

FRUIT GARDEN.

Our *Strawberry-pots* are still partly out. The little nip of frost will do them good as helping to check growth, and part have now been put under protection, and the rest will be secured from heavy wet and frost as soon as possible. We will either sink the pots or pack them close together in leaves so as to defend the pots from the frost; and the tops can also be secured, though a few degrees there will do less harm than having the pots exposed. The pots have been standing on a hard gravel, with tar underneath, and so little water have they had of late that the roots have been running quite freely along the surface of the gravel, and some of the pots required a gentle pull to take them up. The roots thus nipped off will not injure the plants; but, had I thought of it, the pots would have had a twist round three weeks ago, and most likely every week since. This would, perhaps, have tended to ripen the buds even better, though I have no reason to find fault with them. A correspondent says in reference to a practice detailed the other week, "Do you then prefer plunging Strawberry-pots at all times that are intended for forcing?" And I reply, No! I only prefer keeping the pots from frosts in winter. In summer I prefer the pots to be exposed somewhat, and to stand on a hard bottom; and, even in early forcing, I either prefer the pots to stand exposed on a hard bottom, or, if plunged at all, that the bottom of the pot should be on a hard surface, as a board or slate.

Ran the hoe through Strawberry-quarters that the rain might sink in when it came. Repotted some Peaches, &c., into larger pots. Would have done it earlier if I had had the pots, but as they still retain some leaves, and as the pots were three-parts plunged in the ground, and will be covered all over with litter, hope the roots will keep growing away all the winter, so that the buds will receive no check in spring from the late repotting. The shift was not a large one, the fibres were disentangled a little at the sides, the plant being well watered previously and the new soil rammed in as hard as possible, and left a little higher than the old ball in the centre. Being thus plunged and covered over with litter, and protected in a glass case no more water will be needed until the buds move in the spring. Plunged and treated others not fresh-potted in the same manner until we can find time to top-dress them well. Vines in pots the same, and being put as close as they would stand comfortably, we shall thus secure room for Strawberries and other things, where they can be kept dry. Looked over Vines, the houses being flat, some kinds are apt to damp with all the air that can be given to them, and one bad berry soon makes other two or three bad. A steep roof is the one for late Grapes. If well glazed, moisture dropping from condensation is next to impossible. Stripped off lots of Fig leaves to give light to Geraniums, &c., placed below, as the Figs still refuse to give over ripening, though a few days' dull weather would render them not worth eating. Pruned front part of Peach-house, washed and painted the wood with a paint of clay, cowdung, and sulphur; forked up the border, and filled the space with boxes of variegated Geraniums, just struck, in order to have them where covering-up could be avoided, and anything like damping be prevented.

Vine-pits were also cleaned and regulated, and filled with plants in the meantime; and late cuttings not quite forward enough, were brought from cold pits and placed in pits where a little bottom heat could be given, and air at pleasure, by just giving a little fire heat. These movings will enable us to have room in cold frames and earth pits for young Cauliflowers, Lettuces, &c., and give some space, too, for similar things in an orchard-house. The *old Geraniums*, &c., stuffed in sheds, of course, escaped all the frost; and as we have no rough boxes at hand, as time permits we keep stripping them of the short joints of their shoots and all the leaves, and stuffing from twelve to twenty-four of them into an eight or twelve-inch pot, filling up three-parts with common soil, watering well, allowing them to settle, and then placing 2 inches or 3 inches of dry soil on the surface, and then placing them below stages, in sheds, anywhere and everywhere, so that [illegible] nor damp to any [illegible]

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Skeletonising Leaves (*A Subscriber*).—We do not know the mode of skeletonising leaves in a quarter of an hour; and if we did we should not think ourselves justified in publishing it, since the discoverer offers to impart it to any one for 5*s.*, and to which he is fairly entitled.

Coal Ashes on Grass Land (*W.*).—If the soil is a strong loam, clayey, or wet, the coal ashes will be of benefit; but if the soil is light and dry they will do more harm than good. If the Clovers and Trefoils do not grow well in your meadow this may arise from a deficiency of sulphate of lime (gypsum) in the soil, and in that case a slight addition of the ashes to your [illegible] compost would be beneficial, for such ashes always contain sulphate of lime.

Cocoa-nut Fibre Refuse (*Mary*).—If you know any one who will take a sack to the Kingston manufactory, fill it, direct it, and take it to the railway station, you may have the sack full gratis. You had better, as you live in Lancashire, inquire at Liverpool or Manchester for a cocoa-nut fibre matting manufactory. You can obtain it there, or at any other such manufactory, as readily as at Kingston.

Mushrooms Growing under a Conservatory (*H. B.*).—Your plan and description seem both good, and we should say there is no doubt but you will be successful. One thing, however, is almost needless—that is, a circulation of air underneath the beds. Mushrooms, like every other fungus, grow best with a confined rather than an ever-changing atmosphere; and we should think, with the height you have, one if not two shelves might be fitted up, and allow the bottom bed to be on the ground. Slate is an excellent material for shelves, and we hope the roof of your Mushroom-house (or [illegible] is arched brick or stonework, and not timber, as nothing tends to destroy timber faster than the confined air and warmth of a Mushroom-bed. You will, however, see some other articles relating to Mushrooms in our columns, and you may depend on the practical character of such communications. But so much depends on the materials used and other circumstances, that failure is not always a condemnation of the means used.

Keeping down Damp in a Pit (*C. Price*).—Concrete the bottom of the place, then cover it with dry rough ashes, and give air at all favourable opportunities. See answer in full about pits in our next week's Journal.

Flower-beds (*J. G.*, *Lynn*).—We uniformly refuse to advise how beds should either be sown or planted. We only point out what is wrong in the planting and sowing submitted to us.

Waltonian Case (*G. S.*).—There is not a man in your whole county who can make a Waltonian proper, except one man, the original maker, one of Mr. West's men, whom he instructed. Scores of people have made the attempt both here and in America, but to no purpose. One of our friends in New York spent £15 on it and failed, and after that had to buy one from Mr. West. Mr. Jones, on Surbiton Hill, who is in the same line of business as Mr. West, and who had full access to Mr. West's workshops and stores, made many of them, and advertised them cheaper than his next-door friend, but they failed. Mr. Beaton assures us the "works" inside these Cases are as ingenious as the work of the clockmaker. He also tells us that it is a point of trust in him never to describe the making of a Case, and no one else can describe it save Mr. West himself and his maker. And all our descriptions of it go no further than the drawings which accompany the advertisement.

Peach Trees on a Small Space (*Inquirer*).—Take a heavy crop if you can get it, and that will stunt the trees. If that does not do it sufficiently, cut the roots in summer whenever you find the shoots getting too strong; keep the shoots equal size by disbudding and stopping back to 1 inch or 2 inches any shoots that appear too gross; that is one way. Another is, suppose that you have as many leading young shoots as you want, lay them in regularly, cause every bud to start next season, and all the well-placed ones retain; and instead of allowing young shoots to grow on, stop them when they have made three or four leaves, stop again when a couple or three leaves are formed, and thus you will have the shoots covered over with spurs. A little root-pruning or lifting these plants, and replanting them every other year, will make them fruitful and lessen vigorous growth.

Apples and Pears for an Espalier Railing (*Idem*).—Apples.—Adams' Pearmain, Cellini, Cornish Gilliflower. Pears.—Louise Bonne of Jersey, Knight's Monarch, Williams' Bonchrétien.

Flowering Hardy Plants for Pillars (*Idem*).—Plants of the Jasminum nudiflorum, though yielding no scent, would look beautiful with their yellow flowers in winter and spring. Roses would also be beautiful in summer, and the double white Clematis would be splendid and sweet in autumn. We might fix on a hundred plants, but hardly anything would beat the Clematis, especially if there was an arch over the gate.

Striking Ferns (*A. L. A.*).—The best way of striking and growing Ferns is too wide a question, and includes a dozen other questions. What kind of Ferns do you mean? Say which, and we can soon answer you in full. The cocoa refuse question is answered in a reply to another correspondent to-day.

Destroying Moss on Fruit Trees (*Rector*).—Painting the stems with a creamy mixture of quicklime, and soot added to subdue the offensive whiteness; or scrubbing the stems with a hard scrubbing-brush dipped in a [illegible]

Cold Pit (*Alpha*).—We will give a copious answer with some illustrations next week.

Lease between Nurseryman and Landlord (*Ten-years Subscriber*).—We are surprised that any one should venture to plant trees, &c., on another man's land, with no other written title to the tenancy than the worse than worthless scrap of unstamped writing of which you send us a copy. It is worse than worthless, because, if it is at all binding, it empowers your landlord to give you notice on the 1st of next December to quit at the end of six months, in the very worst period a nurseryman can quit. We cannot advise you how to act if your landlord is unfriendly; but if you both act rationally, the best course to pursue will be to have a friendly arrangement for you to quit at a season more favourable to the removal of nursery stock. The writing can be stamped at any time upon paying a fixed penalty.

Lapageria rosea Culture (*C. K.*).—We find that No. 575 is out of print, so we condense from it the following. For the first three or four years of good growth Lapageria may be grown in a pot as well as in a border, as some extra heat can be thus given it for two or three months in the spring, as we have reported from the nurseries. The plant should not be potted under any circumstances later than the middle of August, nor be kept in artificial heat later than the middle or end of September. In ordinary cases, however, this plant ought not to receive artificial heat after the summer sets in warm enough to dispense with fires in stoves and drawing-rooms. Keep the frost from it in winter, and at the end of February introduce it into stove heat, if there is a stove; and, after 6 inches of fresh growth are made in heat, pot it afresh, if it require it, and keep it in this heat till the end of May, by which you will gain two more months to the summer as it were. A north rafter in a conservatory-house will suit it best: but as to pole, pillar, trellis, or chains, they are all the same to all climbers. As to the size of the pot or pan, that depends entirely on the quantity of roots. Once it is fairly in good growth, Lapageria rosea requires an enormous deal of water—say four times more than a Passion-Flower. When three or four years old it should be planted in the greenhouse or conservatory-border.

Names of Fruits (*J. Y.*).—Apples.—No. 1, Cambridgeshire Pippin; 2, Dumelow's Seedling; 3, Court-pendu Plat; 4, Pearson's Plate. Pears.—No. 1, Winter Nelis; 2, Crasanne; 3, Hacon's Incomparable; 4, Passe Colmar. (*H. I. P.*).—No. 1 is a bad specimen of Duchesse d'Angoulême; 2, Napoleon; 3, Winter Nelis; 4, Beurré de Rance; 5, Thompsons'; 6, Black Worcester. (*Devon*).—No. 1, Boston Russet; 2, Gloria Mundi; 5, Hicks' Fancy, or more properly Early Nonpareil. (*S. T. P.*).—Your Apple which is so beautifully striped and with a bloom on it is Hoary Morning. The green one is Bedfordshire Foundling. (*Clericus*).—No. 1, Verulam Pear, or, as it used to be called, Buchanan's Spring Beurré—it is only a stewing Pear; 2, Beurré Diel; 3, Passe Colmar; 4, Duchesse d'Angoulême; 5, Beurr d'Aremberg; 6, Beurré Bosc; 7, Knight's Monarch. (*A Subscriber*).—Do have mercy on us. How do you think we can find time to examine and name about three dozen Pears and more than half as many Apples? You must wait. (*Adam, jun*).—It is the fruit of Passiflora edulis. You may still plant Roses in the open ground.

Names of Plants (*T. K.*).—Taxodium distichum and Rhamnus alaternus maculatus. (*J. D.*).—Very imperfect examples. They appear to be—1, Matricaria chamomilla; 2, Geranium pusillum; 3, Scabiosa succisa; 4, Galium parisiense.

FLOWER SHOWS FOR 1861.

November 12th and 13th. Stoke Newington Chrysanthemum Society. *Sec.*, W. T. Howe.

November 14th and 15th. Crystal Palace. (Chrysanthemum Show.) *Sec.*, W. Houghton.

N.B.—*Secretaries of Societies intending to advertise in our columns will oblige us by sending an early intimation of their exhibition days.*

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

WHO MAY WIN AT BIRMINGHAM AND THE CRYSTAL PALACE SHOWS.

A short time since it was our duty to warn our friends and readers that it was time to make their entries if they intended to be among those who achieve the great distinctions, and secure (if they wish to do so) the substantial profits of the great prizes at Birmingham and the Crystal Palace. For many years at this period we reiterate old instructions to our subscribers, and ask ourselves whether our efforts are not "tedious as a thrice-told tale." We need not, however, wait for an answer. The queries we receive, and the advice that is asked, prove to us either that the knowledge is laid aside till wanted and is not then to be found, or that it is altogether forgotten, or that there is always a new class springing up, and that if every new subscriber buys our back Numbers he does not of necessity read them.

The art and practice of prophesy have of late taken a start in the racing world. The prophets, like fortune-tellers, make stock of their success, and sink their failures in the waters of Lethe; or, seeing we are just now on our classical stilts, we will say that many of the modern prophecies are like the ancient oracles, and will bear such interpretation as may be desired even by adverse parties. These are at best but utilitarian days; all things have their money price, and "re-racing" the future will be invaded and forestalled, and the events of next month positively described in return for thirteen postage stamps enclosed to "R. F.," care of Tom Saunders, *Pegasus* Office, White Horse Lane.

We are very glad no such efforts are required of us. We can tell Sempronius "'Tis not in mortals to command success," but we can also teach him to do more—we can teach him to deserve it. Perhaps that requires qualification. We can, then, tell him what to avoid; we can lay down a chart in which all the rocks and quicksands on which many have made shipwreck of their success will be plainly marked. To our work, then.

Spanish.—Perfectly upright comb for the cock, falling over for the hens. Thoroughly white faces, without mixture of red. Perfectly black plumage. Size desirable, not essential.

Dorkings.—Size essential. Combs immaterial; but alike in all the birds composing the pen. White legs, and good distinct five claws. It is well to observe that, although it is desirable, it is not absolutely necessary the extra claws should be long ones. Disqualification cannot follow where there are five; but two nails on one claw are not sufficient. In the Coloured Dorking classes there is no fixed or settled colour; but, at the same time, there must be no startling incongruity or offensive contrast. It must always be borne in mind the competition at these great shows is very great, and at times so close that a trifle will turn the scale. In these, as in all white-legged fowls, it is well to send them to an exhibition clean, and a flannel, with a little warm water and soap, will remove all superficial dirt.

Cochin-Chinas.—Large size very desirable, but not sufficiently important to hide defects. Straight and upright combs, sharp heads, well-clipped wings, ample fluff, and well-feathered legs necessary to success. In the Grouse and Partridge varieties, the cocks must have black breasts, and the less yellow tinge there is in the hens or pullets, the better it will be for their chance of success. The white variety must have yellow legs.

In the Game you must have sharp and intelligent heads, close plumage, straight combs for the hens, absolute matching in colour, flat feet, short thighs, faultlessly straight breast-bones, and high condition. The exhibitor in these classes must be very careful that his birds agree, and the appearance of concord for a few hours is not enough. The neglect of this precaution causes numbers of disqualified pens, because a cock and hen or pullet cannot compete where two are necessary; and when Game fowls disagree, cannibalism begins at once. It is a natural but a sorry consequence to find a prize lost and a good bird spoiled for want of painstaking.

Show your Polands honestly. Do not seek to improve the black with white top-knots by trimming away any black feathers there may be in front of the top-knot. Choose your hens of this breed with close, compact top-knots. In this class only of Polands may the cock have comb, gills, or spikes. Golden and Silver Polands *must* have spangled breasts, laced and barred wings, and the hens must be spangled all over. In the Silver all the tails in the pen should be purely white, tipped with black. The cocks should have clouded hackle and saddle, and they are *disqualified* if they have either comb, gills, or spikes. It is important you should carefully examine the backs of all the birds of this breed you send to exhibitions, as they are very prone to be crooked and hump-backed. *Either will disqualify.*

Pencilled Hamburghs should have accurately-marked plumage, the ground colour being yellow or white as may be; every feather taken separately should present from eight to twelve markings, or from four to six stripes. The conjunction of these forms the pencilling. They must, therefore, be well-defined. If they run into patches, they are mossy; if they are too small they become spots, and, failing to join, they do not form pencilling—both are *very serious* defects. The tail-feathers should be pencilled to the point. The hackles should be spotless; but it is difficult to accomplish this. In both cocks and hens, the comb must be very bright, full of points, spiked behind, the spike turning upwards. These combs must be firm on the head. Any falling over, or obliquity, are disqualifications.

(*To be concluded next week.*)

"WHO BOUGHT MY PEN OF FOWLS?"

I read in your last a letter from Mr. Musgrove respecting who bought his pen of fowls at the last Crystal Palace Show. Now, as the present owner of the birds, your reply to him is all that I think is required, and I only have to say that if the Crystal Palace authorities permit the names to be given up of persons claiming poultry, it will prevent many from doing so.

We all have our "hobbies." I have one for poultry, and, as Mrs. Blair says, "I ride it;" and to indulge this hobby I may give more for a pen of birds than I reasonably ought to do, and at the same time do not wish all the world to know it. Besides, I can see no good by its being known. At any rate, if the Crystal Palace authorities do so, they will have no more ten per cent. commissions to deduct from sales of birds to me. And as to publishing the breeder's name, it is well known Mr. Musgrove claimed a pen of Buff or Cinnamon Cochins at the last Crystal Palace Show for £20, and he exhibited them again at Worcester in the expectation of winning the vase; but did he say they were not bred by him in the catalogue at Worcester? No! Then let him not find fault with others when he sets such a bad example himself; and, as Mr. Musgrove appears so anxious to know who claimed his pen, I can only say he can meet the owner in person at Birmingham Show (perhaps somewhere near the first prize Partridge Cochin pen chickens of 1861), when he will afford him every satisfaction he may require; but as to Mr. Musgrove fearing buying back the same strain, falsely or otherwise, he may rest assured he will never have a chance, at least not if it is known to—A YOUNG COCHIN COCK.

DEVIZES POULTRY SHOW.

THIS Show of poultry proved to be one of the best that has taken place during the present year. The competition was of a very close character, and embraced not only well-known exhibitors from all parts of England, but even the sister isle was represented by poultry that would well add to the high character of any similar meeting. Perhaps one of the most confirmatory proofs we can adduce in support of the statement just made is the fact that in an entry of 331 pens, a favourable notice from the Judge in the prize list will be found to no less than 184 pens—a circumstance in any local show almost without precedent. It will perhaps be well here to mention that by the predetermined arrangement of the Devizes Committee, "Very Highly Commended" cards were appointed for those especial pens that ran more closely than ordinary in the wake of the actual prize-takers. That such a provision adds most materially to the difficulty and general labours of an arbitrator will, even at first sight, be obvious to any of our readers; and indeed so much so that in very large entries, such, to wit, as those of Birmingham and the Crystal Palace, it would be impracticable to carry it out; still, in a comparatively small show, at which not unfrequently the competition is so complicated in point of numbers for priority of position between the lowest premiums and those pens enjoying the simple honour of a high commendation, this plan appears not unreasonable. In this place, a little item might be favourably alluded to, rather more interesting to the committees of poultry shows and the appointed arbitrators than the exhibitors themselves—viz., the introduction of a schedule of the premiums offered, bound up as a first page of the Judges' books, so that those gentlemen can at once refer to every condition, without either the loss of time or unavoidable mistakes that sometimes arise from not having the printed regulations at close hand during the very time when, of all others, their consultation is the most important.

With praiseworthy precaution to avoid any errors arising, and to be also able to speak personally to the actual condition of every pen on its arrival, the toilsome task of unpacking every lot of poultry was self-assigned to one of the Honorary Secretaries—Mr. Saunders Sainsbury, which, together with the re-packing by the same individual, was efficiently fulfilled. We feel gratified in being able to state the fact, that among all the poultry received, only one death had arisen during transit—that of a Mandarin Duck that had actually travelled from Dublin for competition. The policy of sending this description of fancy birds so long and precarious a journey admits of some doubt, as, on account of not being so thoroughly domesticated in their habits as common poultry, any little hardship tests their endurance most materially, and sudden changes of any kind not unfrequently produce uncontrollable frights of a serious character. The Duck, when received, appeared to have been dead for several hours. The drake looked as well as ever, and was one of the most perfect and high-coloured specimens we ever saw. Without a wish to belong to those who ape the sentimental, we cannot forbear to allude to a circumstance that really deserves [illegible] The dead Duck was taken out of the basket, for the inspec- [illegible] arbitrator, when its beauteous mate at once recognised [illegible] plainti[illegible] and opening its wings, as though anxi[illegible] recover [illegible] directly it was removed, which was [illegible]

before. It will be seen by reference to the prize list that an extra bounty of 10*s*. was allotted to this pen.

The *Spanish* class was a peculiarly good one. The hens in the first-prize lot were unusually excellent; but this pen yet wants another month to be in first-rate feather. They belonged to Mr. Martin, of Claines, Worcester. It is almost superfluous to say that the second and third-prize pens, both of Mr. Rodbard's stock, were also excellent. Several of the highly commended pens were also well worthy of praise.

The Grey *Dorking* class was first-rate, Lady Julia Cornwallis taking both the principal prizes, and Lady Louisa Thynne proving a very close run, as a third. Nearly every pen in this class, and also the White Dorkings, was far better than customary. In White ones, it will be seen the Rev. G. F. Hodson and Mrs. Beardmore took relative positions.

In the *Game* classes, the birds, as we anticipated, were barely as yet recovered from moulting, but most of them were truly good specimens. In these classes, Mr. Fletcher, of Stoneclough, Manchester, monopolised a full lion's share. The whole of this gentleman's exhibited stock showed very excellent management, and no doubt we shall hear of most of them in other prize lists. The condition of Mr. Dawson's birds is well worthy of mention also.

In Buff *Cochins*, Mrs. Fookes swept the deck of all prizes, as did Mr. Cartwright in the Partridge-coloured variety. It is really a great pity that Mr. Cartwright's first-prize cock is moulting mealy in the tail-feathers, being in all other respects a pen only rarely equalled. In White Cochins, that well-known exhibitor, Mr. Titterton, of Birmingham, took precedence, but his fowls were exhibited in sad plumage, though first-rate specimens. It is a mistake to injure them by long journeys and close confinement in their present lack of plumage.

It is the old cry to say Mr. Ballance won the principal *Malay* prizes with capital birds and well shown. Of *Hamburghs*, decidedly the best breed were the Silver-spangled ones. Mr. Joshua's first-prize pen were about as faultless a group as we can call to recollection. The Silver-pencilled were remarkably good. The Black *Polands* were gems, but still want a week or two to bring them into complete feather. The *Brahmas* were a very numerous and good class. In *Bantams*, the Game and Sebrights were the most commendable, though all these classes were good throughout, as may also be said of the *Ducks*, *Turkeys*, and *Geese*, generally. The East Indian Ducks were a large and unusually perfect class, the Hon. Sec. holding his own against all opponents. The extra varieties of poultry were both novel and well shown. The attendance of visitors was beyond anticipation, and the Show passed off successfully.

SPANISH.—First, J. Martin, Mildenham Mill, Claines, Worcester. Second and Third, J. R. Rodbard, Aldwick Court, Wrington, Bristol. Highly Commended, J. O. Brinkworth, Coal Wharf, Calne; V. Sandford, Chatsworth Lodge, Mannamead, Plymouth. Commended, A. Heath, Calne.

DORKINGS (Coloured).—First and Second, Lady J. Cornwallis, Linton Park, Staplehurst. Third, Lady L. Thynne, Muntham Court, Worthing. Very Highly Commended, Lady J. Cornwallis; Lady L. Thynne; Marquis of Bath, Longleat, Warminster. Highly Commended, Rev. J. G. A. Baker, Old Warden, Biggleswade; J. J. Willan, Potterne, Devizes; W. Joshua, Perrot's Brook, Cirencester. Commended, G. Hanks, Quobwell Farm, Malmesbury; R. W. Boyle, Rosemount, Dublin; Marquis of Bath.

DORKINGS (White).—First Rev. G. F. Hodson, North Petherton, Bridgewater. Second, Mrs. Beardmore, Uplands, Fareham, Hants. Highly Commended, Mrs. H. Fookes, Whitechurch, Blandford.

GAME (Black-breasted and other Reds).—First and Second, J. Fletcher, Stoneclough, near Manchester. Third, V. Sandford, Chatsworth Lodge, Mannamead, Plymouth. Very Highly Commended, E. Archer, Malvern; W. Dawson, Selly Oak, Birmingham; R. Elling, Sutton Parva, Warminster. Highly Commended, J. Keable, Thatcham, Newbury, Berks. Commended, Rev. G. S. Cruwys, Cruwys Morchard Court, Tiverton.

GAME (Duckwings and other Greys and Blues).—First, J. Fletcher, Stoneclough, near Manchester. Second, W. Dawson, Selly Oak, Birmingham. Third, A. M. Sloper, Seend.

GAME (any other variety).—First, W. Dawson, Selly Oak, Birmingham (Black). Second, T. Burgess, jun., Burleydam, Whitchurch, Salop (Black). Third, J. Fletcher, Stoneclough, near Manchester (Black). Commended, T. Wilkinson, Newgate, Holmfirth, Huddersfield (White).

COCHIN-CHINA (Cinnamon and Buff).—First and Second, Mrs. H. Fookes, Whitechurch, Blandford, Highly Commended, Miss V. W. Musgrove, West Tower, Aughton, Ormskirk.

COCHIN-CHINA (Brown and Partridge-feathered).—First and Second, P. Cartwright, Oswestry. Commended, Mrs. H. Fookes, Whitechurch, Blandford; Miss V. W. Musgrove, West Tower, Aughton, Ormskirk.

COCHIN-CHINA (any other variety).—First, C. R. Titterton, Metchley Abbey, Harborne, Birmingham (White). Second, G. C. Whitwell, Kendal (White). Highly Commended, E. Pigeon, Lympstone, Exeter (Black).

MALAYS.—Prize, C. Ballance, 5, Mount Terrace, Taunton, Somerset. Very Highly Commended, C. Ballance.

HAMBURGHS (Golden-pencilled).—First, J. Munn, Heath Hill, St[illegible]stead, Manchester. Second, A. Nuttall, Newchurch, Manchester. Highly Commended, A. Nuttall.

HAMBURGHS (Silver-pencilled).—First, [illegible] Martin, Mildenham Mill,

Worcester. Second, J. Munn, Heath Hill, Stacksteads, Manches-
ighly Commended, Master E. E. Keable, Maddell Farm, Lam-
Berks.

ᴜʀɢʜs (Golden-spangled).—First, J. Dixon, 'Bradford, Yorkshire.
, W. R. Lane, Bristol Road, Birmingham. Highly Commended,
Pepworth & Coldwell, Norridge, Holmfirth, Yorkshire; L. Wilt-
'olice Station, Calne. Commended, F. Baily, Calne,

ᴜʀɢʜs (Silver-spangled).—First, W. Joshua, Perrott's Brook,
ster. Second, Lady J. Cornwallis, Linton Park, Staplehurst.
Commended, Lady J. Cornwallis; J. Martin, Mildenham Mill,
Worcester.

ɴᴅs (Black with White Crests).—First, G. Ray, Ivy Cottage, Mine-
lants. Second, T. P. Edwards, Lyndhurst, Hants. Highly Com-
, J. Dixon, Bradford, Yorkshire. Commended, Messrs. Pepworth
dwell, Norridge, Holmfirth, Yorkshire.

ɴᴅs (Golden).– First, J. Dixon, Bradford, Yorks. Second, Mrs.
Ashe Rectory, Overton, Hants.

ɴᴅs (Silver).—First, J. Dixon, Bradford, Yorks. Second, withheld.

ᴍᴀ Pᴏᴏᴛʀᴀ.—First, J. H. Craigie, Woodlands, Chigwell, Essex.
Lady L. Thynne, Muntham Court, Worthing. Very Highly Com-
, A. Heath, Calne. Highly Commended, A. Heath, Calne; Miss
riel, Calne. Commended, J. K. Fowler, Prebendal Farm, Ayles-
. H. Craigie.

ᴀᴍs (Game).—First, T. H. D. Bayley, Ickwell House, Biggles-
eds. Second, O. Nicholson, Fareham, Hants. Very Highly Com-
, V. Sandford, Chatsworth Lodge, Mannamead; R. W. Boyle, Rose-
Dublin; Miss V. W. Musgrove, West Tower, Aughton, Ormskirk.
Commended, Mrs. Beardmore, Uplands, Fareham, Hants; H.
Lympstone, Devon; M. Leno, jun., the Pheasantry, Markgate
Herts; R. L. Liscombe, Burleigh, Plymouth. Commended, W. R.
risto' Road, Birmingham.

ᴀᴍs (Gold and Silver-laced).—First, M. Leno, jun., the Pheasantry,
te Street, Herts. Second, T. H. D. Bayley, Ickwell House, Biggles-
Beds. Very Highly Commended, Rev. G. S. Cruwys, Cruwys
rd Court, Tiverton. Commended, Rev. G. F. Hodson, North
on, Bridgewater (Gold); Miss G. Everett, Gibraltar Cottage, Mon-
(Silver); Lady L. Thynne, Muntham Court, Worthing (Gold);
S. Cruwys.

ᴀᴍs (any other variety).—First, Mr. F. Hutton, Garden House,
Leeds (Black). Second, T. H. D. Bayley, Ickwell House, Biggles-
Beds (White). Highly Commended, Rev. G. F. Hodson, North
on, Bridgewater (Black); V. Sandford, Chatsworth Lodge, Manna-
White).

ᴏᴛʜᴇʀ Dɪsᴛɪɴᴄᴛ ᴏʀ Cʀᴏss-ʙʀᴇᴇᴅ ɴᴏᴛ Mᴇɴᴛɪᴏɴᴇᴅ.—First, E.
Garden House, Pudsey, Leeds (Black Hamburghs). Second, Miss
rt. Broadlease, Devizes (Silk Fowls). Very Highly Commended,
Thynne (Silkies). Highly Commended, H. Jennings, jun., Virginia
Pheasant Fowls); E. Pigeon, Lympstone, Exeter (Crève Cœur);
Nicholas, Malpas, Newport, Monmouth (Silkies); Commended, A.
Longstreet, Pewsey.

.—First, Marchioness of Winchester, Amport St. Mary's, Andover
se). Second, Mrs. H. Fookes, Whitechurch, Blandford. Very
Commended, R. W. Boyle, Rose Mount, Dublin (Toulouse); H.
Blacklands Park, Calne (Chinese). Highly Commended, Mar-
of Winchester (Toulouse); Lady L. Thynne.

ᴋʏs.—First, Miss L. Crawshay, Caversham Park, Reading (Cam-
Second, Marchioness of Winchester (Cambridge). Very Highly
nded, Mrs. H. Fookes, Whitechurch, Blandford; Miss J. Milward,
St. Loe, Bath.

(Aylesbury).—First and Second, J. K. Fowler, Prebendal Farm,
ry. Very Highly Commended, G. Hanks, Quobwell Farm, Malmes-
Highly Commended, G. Briant, jun., Littlecott Mills, Pewsey; G.
J. O. Brinkworth, Calne.

(Rouen).—First, J. K. Fowler, Prebendal Farm, Aylesbury.
J. Holme, Knowsley, Prescot. Very Highly Commended, W.
Perrott's Brook, Cirencester. Highly Commended, Marchioness
hester; Rev. H. G. Baily, Swindon; W. Locke, Cleve House,
Melksham. Commended, W. R. Elliott, 5, Windsor Villas, Ply-
Lady L. Thynne.

(Black East Indian).—First and Second, G. S. Sainsbury, Rowde,
. Very Highly Commended, G. S. Sainsbury; Mrs. Beardmore,
, Fareham, Hants; J. Martin, Claines, Worcester. Highly Com-
G. S. Sainsbury. Commended, Mrs. Jenner, Netheravon; G. S.
y.

(any other variety).—First, J. Dixon, Bradford, Yorks (Man-
Second, T. H. D. Bayley, Ickwell House, Biggleswade, Beds
alls). Extra Prize, R. W. Boyle, Rose Mount, Dublin (Mandarin).
ghly Commended, Marchioness of Winchester (White Eye); W.
Cleve House, Seend, Melksham (White Call); W. Joshua, Perrott's
Cirencester (Wild). Commended, E. Hutton, Leeds (Wild).

Cocks (any colour).—First and Second, J. Fletcher, Manchester.
T. Burgess, jun., Burleydam, Whitchurch, Salop. Highly Com-
, Rev. G. S. Cruwys, Cruwys Morchard Court, Tiverton.

Cᴏᴄᴋᴇʀᴇʟs (any colour).—First, J. Keable, Thatcham, Newbury,
Second, R. Elling, Sutton Parva, Warminster. Third, E. Archer,
. Commended, J. Fletcher, Stoneclough, Manchester; T. Burgess,
rleydam, Whitchurch, Salop.

Bᴀɴᴛᴀᴍ Cᴏᴄᴋs.—First, W. S. Forrest, Eagle Cliff, Greenhithe.
T. H. D. Bayly, Ickwell House, Biggleswade. Third, Miss E. A.
l, Southwell. Highly Commended, T. H. D. Bayly; Miss V. W.
e, West Tower, Aughton, Ormskirk. Commended, T. Burgess, jun.,
m, Whitchurch, Salop; O. Nicholson, Fareham; R. Moon, Sand-
ge, Wavertree, Liverpool.

ʜ Cᴏᴄᴋs.—Prize, J. R. Rodbard, Aldwick Court, Wrington, Bristol.
Commended, J. O. Brinkworth, Coal Wharf, Calne.

ɴɢ Cᴏᴄᴋs.—First, Lady L. Thynne, Muntham Court, Worthing.
Lady J. Cornwallis, Linton Park, Staplehurst. Highly Commended,
J. A. Baker, Old Warden, Biggleswade; Lady L. Thynne. Com-
H. Blake, West Lavington.

Cʜɪɴᴀ Cᴏᴄᴋs.—Prize, Mrs. Herbert, Powick, Worcester. Com-
A. Heath, Calne.

ʀɢʜ Cᴏᴄᴋs (Pencilled).—Prize, Master E. E. Keable. Maddell
ks.

ʀɢʜ Cᴏᴄᴋs (Spangled).—Prize Lady J. Cornwallis, Linton Park,
st (Silver). Commended, Rev. C. J. Down, Semington.

Mᴀʟᴀʏ Cᴏᴄᴋs.—Prize, C. Ballance, Mount Terrace, Taunton. Commended, W. Manfield, jun., Dorchester; J. J. Fox, Devizes.

Sɪɴɢʟᴇ Cᴏᴄᴋs ᴏғ ᴀɴʏ Bʀᴇᴇᴅ ɴᴏᴛ Mᴇɴᴛɪᴏɴᴇᴅ.—Prize, J. H. Craigie, Woodlands, Chigwell, Essex (Brahma Pootra). Very Highly Commended, J. Hinton, Hinton, near Bath (Brahma Pootra); T. H. D. Bayly, Ickwell House, Biggleswade (Gold-laced Bantam). Commended, A. Heath, Calne (Brahma); Lady L. Thynne, Muntham Court, Worthing (Gold-laced Sebright).

The Judge was Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, near Birmingham.

DRAKE WITH USELESS LEG.

I ʜᴀᴠᴇ a fine Aylesbury drake weighing about 9 lbs., and about ten months old, which has a very weak leg—so much so, that it cannot stand on it, and when swimming stretches the leg right out behind, and does not use it. It is not cramp, neither is there any outward appearance to lead any one to suppose that it is diseased or otherwise. At present I have done nothing to it. It seems to me to be more in the thigh than the leg, but it is not at all inflamed. I should feel obliged if your readers can recommend me what to do?—B. S. P.

[We know hardly what to advise. If the lameness came from the thigh, and if the thigh withers or perishes, we consider the case hopeless. If there is no withering of the thigh, we should examine the joint carefully to find if the disorder be there. We think there must be partial dislocation; if so, it can easily be reduced, and the bird put in a small cage filled with soft straw or hay. In any case this would be wise, as the weight of the bird is too great for a diseased member to support.]

FOOD FOR CAGED SEED-EATING BIRDS.

Iɴ your answer to "L. B." on October 8, you state it is a common occurrence for birds to die about moulting time, in consequence of being fed on improper food; but you do not state what is proper.—J. S.

[The best food for seed-eating caged birds I consider is canary seed, shelled oats and millet, accompanied with clean water, sand and green food; occasionally a little piece of bread, or boiled carrot, potato, or broccoli, and a slice of apple or pear as a treat. Rapeseed I consider too pungent, hempseed too exciting, and both too oily to be proper for constant use.—B. P. Bʀᴇɴᴛ.]

THE SUPER-POSED HIVE BECOMES THE STOCK-HIVE.

I ɴᴏᴛɪᴄᴇ an article on the "Uniting of Bees" from "A Dᴇᴠᴏɴsʜɪʀᴇ Bᴇᴇ-ᴋᴇᴇᴘᴇʀ," in Tʜᴇ Jᴏᴜʀɴᴀʟ ᴏғ Hᴏʀᴛɪᴄᴜʟᴛᴜʀᴇ of 29th October last, to which I decidedly take objection. I would most respectfully take the liberty to submit, with your permission, to the readers of your excellent Journal, my very humble opinion with regard to the lower hive becoming the stock-hive.

I have now been a bee-keeper for upwards of forty years, and my experience in manipulating with bees is considered equal to any man's in Scotland; and instead of, as the "Dᴇᴠᴏɴsʜɪʀᴇ Bᴇᴇ-ᴋᴇᴇᴘᴇʀ" asserts, "having invariably found that a queenless hive placed upon another possessing a queen, the lower one becomes the stock-hive," in every single instance, in all my experience, the hive that is placed uppermost, whether that hive be a queenless one or not, was always found to be the stock-hive—Jᴏʜɴ Bʀᴏᴡɴ, *Road Contractor, Stewarton.*

[This letter, taken in conjunction with the testimony of "A Rᴇɴғʀᴇᴡsʜɪʀᴇ Bᴇᴇ-ᴋᴇᴇᴘᴇʀ" must be held to be decisive of the fact that when bees are united by what a correspondent has termed "super-posing," or placing one hive upon another, they will, at any rate very frequently, adopt the upper one as the stock-hive. As this is contrary to our own experience, the inquiry naturally arises, To what cause are we to attribute this apparent discrepancy? Upon reviewing the circumstances, we perceive that we have, without being aware of it, acted in some measure on a foregone conclusion, and, as it were, compelled our bees to adopt the lower as the stock-hive by closing the upper entrance, and forcing them to work through the lower one. This was the state of affairs which was present to our mind when we stated that we had invariably found that the lower one became the stock-hive. What might be the result of leaving both entrances open or of closing only the lower one we have never tried;

and it appeared to us so much a matter of course to leave the superior stock in its place, and effect the union by placing the queenless one on the top, and compelling all the bees to work through the lower entrance, that this was what we had in contemplation when we offered so positive an opinion. That this opinion was perfectly correct under the supposed circumstances we have not the slightest doubt. Even if the queen first commenced laying in the upper hive, the ultimate adoption of the lower one as the breeding place would only be a question of time, since it is well known that instinct invariably causes bees to appropriate for breeding those combs which are nearest the entrance, whilst honey is deposited at the top; or, as in the case of collateral and unicomb-hives, as far from the doorway as possible. We have known a Nutt's hive stocked by placing a common straw hive over the "pavilion," through which they were compelled to work until they had filled it with comb, when the old hive was taken off full of honey and perfectly free from brood, the "pavilion" having become the stock-box. So long as the reign (we believe) of Charles II., a patent was granted to Nicholas Gedde for the use of storifying-hives on the principle of inserting nadirs furnished with bars, through which the bees were compelled to work. When breeding was transferred to the lower compartments the upper one was removed, and this process was repeated as often as the season would admit of, and continued year after year. Wildman's hives were on the same principle, and answered perfectly, so far as concerned the bees always transferring their breeding place to the lower hives, although they failed in respect of the quality of honey attained, owing to the combs in which it was stored having been previously bred in, whilst they were also open to the more serious objection that combs built in nadirs are seldom fitted for breeding, owing to their generally consisting of a disproportionate quantity of drone-comb.

Whilst on the subject of drone-combs, we may state our belief that their presence in too great quantity is more frequent than is generally supposed, whilst it is one of the most serious evils that can afflict a stock-hive. It is to this cause that we should attribute the circumstance related by "A RENFREWSHIRE BEE-KEEPER," in page 59, and not as he imagined to an old queen returning to the drone-laying condition of a virgin, which we believe to be a very rare occurrence, and one which has never come under our observation We had the opportunity of examining the combs of a stock-hive destroyed this autumn, in which one-half of every comb consisted of drone-cells, and its proprietor confirmed our impression as to the overwhelming number of drones which had been the result. Our idea is that the queen died when the hive was half filled with combs, which, in accordance with their instinct, the bees completed with drone-cells before a young queen was hatched.

As a contrast to the above, we may instance a stock-hive which has thrown two of the strongest and most prosperous swarms we have seen this season, and in which the only drone-comb was a piece but little larger than a man's hand. We believe that one of the greatest, but at the same time the least appreciated, of the advantages arising from the use of bar-hives is the facility which they afford for limiting the production of drones by removing the combs in which they are bred, and substituting worker-combs in their place.—A DEVONSHIRE BEE-KEEPER.]

QUEENS EXPELLED—UNITING BEES.

YOUR worthy correspondent, "A DEVONSHIRE BEE-KEEPER'S" reply, at page 20, to "A." on "a queenless hive," has rather puzzled me, wherein he says, "Had you seized her at once and returned her to the hive through an opening at the top, all would have been right." Having now seen scores of queens expelled under every circumstance he could mention, and returned according to his direction, I must say I have never yet seen one single instance of a queen being returned, but had the vexation of seeing her expelled a short time afterwards. I would like to have some of your correspondents' opinion on this matter.

Also, at page 78, in replying to "A Ligurian Misadventure," he says, "My correspondent made a great mistake in attempting to unite bees to his Ligurian stock so soon after its arrival," &c.

Surely "A DEVONSHIRE BEE-KEEPER" must have overlooked the good effect produced from excitement by travelling when he penned such an assertion, as we Ayrshire bee-keepers have [illegible] found a more fitting time for making unions than when [illegible] either in the case of one or both hives being excited. I may also mention that it is quite a common practice here to unite hives when half-way on our journey homewards from the moors, and considered as safe as in the month of June, when honey is to be gathered from every flower.—STEWARTON APIARIAN.

[I am much obliged to the "STEWARTON APIARIAN" for the kindly tone of his criticism upon my replies to "A." and "J. N." As the development of truth is the object we both have in view, I have pleasure in submitting to him my reasons for believing that in each instance the replies given were correct.

In the first case he is, in my opinion, mistaken with regard to the queen being "expelled," since it is far more likely that she quitted the hive in a state of bewilderment after missing her footing on the diminutive combs, and being precipitated to the floor-board beneath. The fact is, that a young Ligurian queen placed at the head of a small artificial swarm, with probably not more than 100 to 200 square inches of comb is in anything but an enviable position. Being endowed with the marvellous fecundity of her race, which would enable her to lay sufficient eggs to fill 800 or 900 square inches of comb, she first lays two or three eggs in every available cell, and then wanders hopelessly over the edges of the combs in the vain endeavours to find cells in which to deposit the burden that oppresses her. What wonder then that such an accident should result as has been described by "A."? Knowing that the queen of a Ligurian stock, which I despatched to a friend at a considerable distance, on the 2nd July last, had quitted her hive with about a hundred workers immediately upon the entrance being opened after travelling, and had been successfully returned, I wrote for particulars immediately upon receiving the "STEWARTON APIARIAN'S" letter, and have had the following reply:—

"31st Oct., 1861.

"Dear Sir,—I beg to inform you that my Ligurian stock seems to get on very well now, although since I last wrote you they have had a most desperate risk. All the bees in my apiary and, I should say, in the neighbourhood had a fearful battle with the Ligurians, and I quite despaired of saving them, but they were able to hold out against the attack, which lasted from morning until night. Of course I was absent, or should have put a summary stop to such an onslaught. You are quite correct as to what occurred when they arrived, and when I picked the queen up and placed her on the alighting-board, she refused to enter. I then placed a small glass over the hole (in the top) and allowed the bees to come up to her, and they took her down in the most affectionate manner, and next day they worked as well as any stock I possessed. They work well now, and I frequently see them carrying in pollen. . . . Of course their numbers were very much thinned by the fight My garden was literally covered with bees, and a large number of them were Ligurians. . . . Their queen must have been a very fertile one, for the box* got very full of bees, and several times in August they were laying out.—Yours very truly, "H. C."

The foregoing instance sufficiently proves that a queen has leaving her hive under the influence of excitement may be successfully returned and induced to remain, and that the colony may do well afterwards.

With regard to my reply to "J. N." I submit that the result proves its correctness. A terrible fight undoubtedly ensued, and that the queen was killed in actual conflict with hostile bees was proved by the fact that she had lost her sting. Any one who is aware with what reluctance a queen bee resorts to the use of this weapon will readily understand from this circumstance to what straits she must have been reduced. The "STEWARTON APIARIAN" may probably be quite correct in believing that bees of the same species might have fraternised amicably under the circumstances. When uniting common bees to Ligurians the case is unfortunately very different. After many fatal encounters the two species have at length been induced to mingle amicably together. By what means this result has been brought about may hereafter be fully explained by—A DEVONSHIRE BEE-KEEPER.

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* The box is a large one, being 14½ inches square, by 9 inches deep inside with ten frames.

OUR LETTER BOX.

SPANISH FOWLS FOR EXHIBITION (*X. O.*).—If your Spanish cocks are in good health and condition, they require no special feeding for exhibition. A little bread and ale may be given with advantage three or four times during the week previous to sending them off. Cold spring water is the best wash for their faces, as the white skin is very delicate, and other applications irritate it.

CHEAP WORK ON BEE-KEEPING (*A Subscriber*).—You can have "Bee-keeping for the Many," free by post from our office, by sending, with your direction, five penny postage stamps.

MASH FOR RABBITS (*H. I. J.*).—Steaming the bran, &c., as you do is a very good mode of making a mash. To promote ventilation have an opening at each side close up to the roof. You can have a piece of carpet hung over each opening. Have the floor kept covered with 2 inches depth of dry [illegible].

POISONING RATS (*All Anxiety*).—Phosphorus pills will destroy them without injuring the poultry if the pills are put into their holes. We [illegible] find anything [illegible] effectual as turning a ferret into their runs about [illegible]

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	NOVEMBER 19—25, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
19	Tu	Stevia salicifolia.	29.071—29.019	47—23	N.W.	—	27 af 7	4 af 4	10 5	17	11 23	323
20	W	Sun's declin. 19° 46' s.	29.990—29.910	48—25	S.W.	—	29 7	3 4	8 6	18	14 9	324
21	Th	Prs. Fred. Wm. born, 1840.	29.798—29.429	51—31	S.	.40	31 7	2 4	13 7	19	13 54	325
22	F	Taluzania triloba.	29.160—29.448	53—25	W.	—	32 7	0 4	23 8	20	13 38	326
23	S	Bupthalmum marinum.	29.678—29.540	42—34	N.E.	.08	34 7	III	37 2	21	13 21	327
24	Sun	26 Sunday after Trinity.	29.757—29.576	43—31	N.E.	—	36 7	58 3	52 10	22	13 4	328
25	M	Coreopsis færulæfolia.	29.511—29.416	42—33	N.E.	.03	37 7	57 3	morn.	☾	12 46	329

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 47.9° and 34.6° respectively. The greatest heat, 59°, occurred on the 20th in 1844; and the lowest cold, 9°, on the 23rd in 1853. During the period 127 days were fine, and on 111 rain fell.

CRYSTAL PALACE CHRYSANTHEMUM SHOW.

November 14th and 15th.

HIS was the largest exhibition of Chrysanthemums on record.

In the first place, the collection of the Crystal Palace Company, consisting of three thousand plants in bloom, was set in large groups from the crystal basin to the very end of the hothouse division next the bronze fountain, or along the whole length of the nave. These groups were set in various ways, as flower-beds are planted, some in circles, some in ovals, and some in other outlines, but all of them were set as the Crystal Palace people well know how to set up for effect. The plants were well grown, and were in prime bloom. But more of them and their fellows another day.

The four corners of the great transept looked more like the Azalea season with competition collections. The side stands along the transept were filled in the same manner, and all along the centre of the transept were the cut blooms, and also on across the stand in front of the grand orchestra, where some beautifully executed designs of terrace gardens and fountains stood, and where a collection of black Grapes from the Messrs. Lane & Sons, stood also, the only fruit at the Show.

The Messrs. Downie, Laird, & Laing exhibited there some enormous specimens of Henry's Leek grown in the Edinburgh style, for cock-a-leekie, a good old dish not known over the borders. These were all the extras except Mrs. James Stoddard's beautiful imitations of flowers in her own best style.

The competition collections were much on a par with those at South Kensington the previous week, but the collections of cut blooms were in much better bloom, so to speak. The first, second, and third prizes went very nearly to the very same growers who were the winners over the water, and the kinds of plants were not much different, while many of them were the very same kinds, if not the same plants.

Mr. Bird had the thirteen seedlings there which I described from his nursery the week before. I heard they mostly got first-class certificates, but did not see the awards, as the Judges were not quite done with their part of the law. Mr. Salter did not exhibit there at all.

At this point I discovered a plot, or a conspiracy, of the nature of those of the time of Waverley. The Scotch again in deep for it against the English crown. You recollect I said that the best white Chrysanthemum, and the newest at Kensington Gore, was the White Queen of England, a new sport yet in the hands of the Messrs. Downie, Laird, & Laing. A Scottish lady, the Lady H. St. Clair, or some one on her ladyship's behalf, has claimed the White Queen of England for a patronymic, against the law of nations and the pride of our common country. This is, indeed, a *casus belli* between the north and south. The clans will, of course, call this flower Lady St. Clair; but in England the sport from our own Queen of England will surely be bought and sold as the "White Queen of England." The same firm has a Picotee sport from this same sport, and why not call that Lady St. Clair at once, to keep down old feuds? At all events my mistaken "White Queen of England," is the best of all white Chrysanthemums.

Mr. Turner, of Slough, had a first prize for a collection of the newer kinds; and Mr. A. Forsyth second, for the same. Mr. Turner's kinds were—Mrs. Turner first, of course, a pure white hybrid, or intermediate between large and Pompon; Pictorium roseum, a large bloomer after Alma and Alarm; Jewess, a most profuse bloomer and one for a first-rate specimen, not so dark as Mount Etna, but of a fiery tint; Queen of the Isles, next to Cassandra; Yellow Perfection, slightly buffish; and General Hardinge, a stout large flower in Indian red.

Mr. Forsyth put up seven plants for six, all newish, of which Rifleman is the best and newest; then Emily, a blush white; Boadicea, a large, rough, round bloomer, after the tints of Dupont de l'Eure; Pandora, same tint as Golden Queen of England; Golden Hermione and Golden Trilby, both good yellows; and Lady Hardinge, larger and lighter than Globosa Stellaris. All in much better condition than they were at South Kensington.

The first collection of sixes (Amateurs), was that of Mr. Ward again. He is the gardener of W. Fowler, Esq., Tottenham Green, and his style of growth is the best model in England. His kinds were - Beauty du Nord, Salamon, Pilot, General Havelock, Defiance, and Golden Christine, which seems the favourite with all the trainers.

Second prize to Mr. George, gardener to J. Nicholson, Esq., Stamford Hill, with Alma, Golden Christine, and old ditto, Auguste Mié, Vesta, and Insigne.

Third to Mr John Pratt, Hackney Fields, for Vesta, Christine, and Golden ditto, Chevalier Domage, another seeming favourite; Dr. McLean, and Sulphurea superba.

Fourth prize to Mr. Glover, gardener to R. C. Lepage, Esq., Tulse Hill, for Chevalier Domage, Vesta, Mount Etna, Golden and nearly a white Christine, and Aregina.

There were six more collections in this class and another one which had a fourth prize, from Mr. Webb, gardener to H. Walmsley, Esq., Clapham Park, Aregina, Alma, and Pilot, three of a tint altogether; then Chevalier Domage, Trilby, and Golden Christine.

Mr. Turner was first amongst Nurserymen in this class of sixes. His kinds were—Julie Lagrave, Madame Camerson, Golden Christine, Mount Etna, Hermion (not Hermione), and Aregina; and Mr. Forsyth was second.

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But in the Pompon class, Mr. Forsyth beat Mr. Turner by one turn of the die. Mac's plants were capitally done. The kinds were — Duruflet, Hélène, Salamon, Ste. Thaïs, and Golden Cedo Nulli. Mr. Turner's kinds were—Bob, Général Canrobert, Cedo Nulli, Duruflet, Bijou de l'Horticulture, and Brilliant.

Among the Amateurs in this class for six Pompons, the first was Mr. Hutt, of the Halfway House, Hackney Fields. The kinds were—Golden and old Cedo Nulli, Andromeda, one of the very best for specimens, a light creamy thing; Miss Julia, Salamon, and Général Canrobert.

Second, Mr. Ward aforesaid; third, Mr. Weston, the best speller; and fourth, Mr. Glover, kinds as above, to save room and the time and temper of the reader.

Here stood a Crystal Palace Pompon Eva—a most seemingly good thing for a specimen—a yellowish flower, tipped with brown. For single specimens of Pompons Mr. Hutt was first with a fine Golden Cedo Nulli; second to Mr. Cook for Ninon; third to Mr. Ward for a Cedo Nulli; and fourth to Mr. Weston for ditto.

The first in single large specimens were Mr. George and Mr. Ward; but the cards of the rest were upside down when I passed. One of the corners of the transept was devoted to pyramidal trained plants, but all the growers had them done too stiff. Mr. Fiveash, gardener to Mrs. Sillems, Clapham Common, and if his plants were a little more loose they would have been perfect; they were most beautifully flowered. The kinds were Cedo and Golden Nulli, Andromeda, Adonis (fine), Hélène, and Bob. Mr. Hooper was second; Mr. Glover third with stiffer plants, much of the same kinds, which make the circle of my round; and then the single blooms, with them Mr. Bird soared high above all he surveyed. The crystal glass bottles again, and again the silver tankards for his Queens of England, and his wrath could hardly be appeased at the Scottish plot against the White Queen of England. The chances are that he will buy up the stock from the canny Scots, and have it next time in a silver goblet under its proper name. His large nosegay of Jardin des Plantes was the finest thing ever seen at a show. Remus is after the tints of Aurora Borealis; then followed in nosegays Hermione, Gluck, Sulphurea superba, Trilby, Alfred Salter, Admirable, Yellow Perfection, Triomphe du Nord (immense blooms), Old and Golden Christine, Beauty, Themis, Queen of England, Golden ditto; two nosegays of Vesta; twenty-four single Novelty (and such novelties!), with Progne, Princesse Marie, Alma, Queen of Yellows, Madame Poggi, Etoile Pelaire, Julie Lagrave, Marguereite de York (very large yellow Anemone after Gluck), Christopher Colomb, Aimée Ferriere, Dupont de l'Eure, Madame Miellez, Annie Salter, Miss Kate, M. Dechamps, Madame Lebois, Stellaris globosa, and Wonderful, and a most wonderful good thing it really is; try it against a liverwort-coloured Chrysanthemum, Dahlia, or Hollyhock, and sigh for their sadness or tristis-like looks. Then he had a boardful of single specimens too long for my room, and another lot for open contest in six sixes—as six Stellaris globosa, six Dupont de l'Eure, six Cassandra, six Novelty, six Yellow Formosa, and six Hermione, all "trimmers;" then the seedlings aforesaid.

The next greatest and most successful exhibitors were Mr. Cattell, of Westerham, Kent, and Mr. Wilkinson, of Old Ford, Bow - both nurserymen, and both in a tie of first-rate prizes for best twenty-four cut blooms. I shall just go through them and stop for this week; but I shall have another turn some day with the "Good Gracious" things and new inventions which I noticed at the Crystal Palace, the basins, their temperature, their furnishing, my own friend's "fly-flappers," and the natural bent of all large and small Chrysanthemums, from the note-book of the best bloomer of them in England.

Mr. Cattell set off with Miss Kate first, then Jardin des Plantes, Novelty, Fabius, Beauty, Cassy, a reddish-buff Hermione (not one), Nonpareil, Golden Queen, Mrs. W. Holborn, Pio Nono, Queen of England, Arthur Wortley, Plutus, Alfred Salter, Lucidum, Glory, Alma, Madame Miellez, Themis, Goliath (one of the oldest and yet of the very best), Aimée Ferriere, Yellow Perfection, and Teromite: all these were A No. 1. Mr. Wilkinson's the same. The kinds—Glory, Themis, Goliath, Lord Elgin, Yellow Perfection, Aregine, Madame Aundry, General Hardinge, Beauty, Plutus, Favourite, Queen of England, Nonpareil, Anaxo, Alma, Dupont de l'Eure, King, Boadicea, Jardin des Plantes, Lucidum, Picto[illegible] [illegible], Alfred Salter, [illegible] [illegible] Mrs. [illegible] Holborn, [illegible]

WINTERING GERANIUMS AND FUCHSIAS THAT ARE GROWING.

I HAVE noticed your remarks respecting wintering Geraniums and Fuchsias, but have seen nothing to guide me as to the best plan to winter Scarlets and Fuchsias that were cut down six or seven weeks since, and have broken well. The shoots are now about an inch long. Should they be kept the same as plants not cut down? No heat can be given them through the winter, but they can be kept safe from frost on shelves near staircase windows, where they can have plenty of light, and such warmth (only), as the air of the house will afford. Can late-struck cuttings of Scarlet Geraniums and Pelargoniums be kept in the same manner—viz., on the shelves with only the warmth of the air of the house?—A LADY.

[All Geraniums—that is, bedding Scarlets, and all Pelargoniums, or greenhouse show Geraniums (but there is no natural difference at all between the two), and all Fuchsias that have been cut down early or late in the autumn, and have broken well, like your own plants, must be grown on slowly the whole winter through. This has nothing to do with the modes of keeping dormant Fuchsias and Geraniums over the winter, and they require to be treated as nearly as possible in the same way as all greenhouse Geraniums. When they are thus cut late in the autumn the best way is to give them bottom heat till they have broken well, and then good greenhouse culture for the rest of the season. Your plants ought to do very well where you have them. Frost and damp are not likely to get at them there.]

A FEW DAYS IN IRELAND.—No. 4.

THE UNDER SECRETARY'S LODGE, PHŒNIX PARK.

WE have no recollection of the house or ornamented gardening at this place, occupied by Major Larcom, and that, we have no doubt, owing to our own carelessness in not asking the intelligent gardener, Mr. Scott, to give us a view of the same.

A practice prevails in many parts of England of showing a visitor the kitchen garden and forcing-grounds merely, and unless directly appealed to on the subject, the mansion and the accompanying ornamental grounds, which often form a key note or centre to the whole, are never honoured with a visit of inspection. Sometimes there may be reasons for this, as the wish of the family to secure privacy, which, in such circumstances, ought not to be broken in upon without consent sought for and obtained. Gardeners even there are generally considered a privileged class, that do not come under particular rules and regulations; and, certainly, few things are more annoying than when, after going to the expense and trouble of travelling many miles, you are coolly told that you cannot be admitted, as no visitors are allowed—or only on a certain day of the week, and you have come on the wrong day.

If an order, however, is given to that effect, whether he likes it or not, the gardener cannot help himself; he ought as a servant to carry out the wishes of his employers. In some cases we have gone round places and felt in a sort of purgatory, because we saw that the gardener was anxious to avoid all observation—was, in fact, dreading to be seen. Better, far better, not to go at all. Even when taking visitors, and especially gardeners, round, when such a practice is even more than courteously allowed, the gardener will do well to avoid meeting directly any of the family if it can be done openly; but anything like hiding or concealment ought thoroughly to be scouted, as whenever seen it always leaves an impression that there was something needing to be concealed. Openness and straightforwardness in this and all other matters are always best.

Two things in this respect are most gratifying at the present day—the liberality of noblemen and gentlemen in permitting their grounds to be seen, and the general propriety of conduct of visitors: thus testifying, by the only means in their power, their appreciation of the boon and privilege conferred. We must own, however, that the mere feeling of curiosity, and that, too, in the higher classes of visitors, not unfrequently triumphs over their good sense, and in other respects their propriety of conduct—for instance, here is a place open at certain times to the public without let or hindrance, the mansion alone is retained as a place of privacy, and, though this is well known, some will pop their heads in at the drawing-room windows, and even open the doors and walk into the room. There again, are several other places where the whole park and pleasure grounds are open, where extensive lawns are set aside for the public to amuse themselves with different games and recreations if they like; but a small portion is shut off that the members of the family may enjoy the charms of privacy. And there some curious Paul Pry individual will be sure to intrude himself, or herself, perhaps as much to the amusement as the annoyance of the proprietors; but certainly to the annoyance and mortified chagrin of all well-conducted visitors. We should be no advocates for Lynch law; but as in all such cases a silent appeal is made to our honour, and the whole premises, as it were, put under our care and keeping, we would not be sorry to see such individuals so marked out for social reprobation as would amount at least to a moral tarring and feathering.

Perhaps we are wrong altogether in alluding to such a matter here, though having evidence that such Paul Prys are as numerous in Ireland as they are on this side of the water, for certainly they bear no reference to the present case. Farther than that I did not see the mansion; and that I attribute partly to the shortness of time, and partly to my admiration of the fine kitchen garden and the mode in which it was filled with first-rate vegetables, though plenty of good old-fashioned flowers were also present in the borders.

The fruit trees seemed in capital order, though not bearing in their usual style this season. But Cabbages of some half-a-dozen kinds—some of them, as the Rose, a Drumhead variety, large enough to fill the mouth of a bushel basket, and others vigorous of all ages, and all colours and hardness and softness of heart, to suit all fancies and tastes. Cauliflowers strong and in different states for succession. Lettuces like large Cabbages, crisp and sweet as a Hazel nut. Celery high-earthed-up already on the 13th of September, and such a height, too, as is not often seen in England. Onions in plenty drying; and Peas and all sorts of Beans in abundance showed that the useful was not sacrificed to the merely beautiful in this garden.

What, however, chiefly struck our attention was a short range of houses (vineries chiefly), which were just rather too well supplied with fruit. The borders of these vineries had open pipes some 3 inches or 4 inches diameter, standing upright some 18 inches above the soil of the border, communicating with a chamber below the border, and that chamber connected again with openings into the atmosphere of the house. These open pipes were in two rows—one a few feet from the front glass, and the other near the front of the border, the pipes standing something like 3 feet from each other in the row. We should suppose that such a border was covered with litter before forcing was commenced, and that the mouths of the pipes outside and inside might be regulated according to the weather. Many would have liked the means of heating that chamber, and thus obtained both heated and moist air into the house. There was, however, no means of doing so, nor yet did we gather from Mr. Scott that he had any particular wish that it should be so heated. He seemed, however, to attach great importance to the air from the outside passing directly through this chamber, and thus becoming mellowed and softened before it entered the house. We cannot say what the general effect had been in this house, as most of the earlier kinds had been cut; but one Vine of the Barbarossa beat everything as to weight and quantity we had ever seen or heard of. The Vine, though confined to one rafter, did not seem all one stem, but from top to bottom of the house it was a wide mass of bunches almost touching each other, and individually each bunch nearly as long as the arm of a short man. We regret now that we did not count the bunches and measure their exact length and the breadth of the shoulders. Some of the best were colouring well, but others were showing signs of distress, and Mr. Scott spoke of removing some of the smaller bunches. Like many of us, he was a little over-covetous. Had less than a half of these glorious bunches been left the crop would have been magnificent.

We cannot say we have done much with this Grape. We are convinced it needs an earlyish house and as much heat as a Muscat. We have pretty well removed it from a late house, as we find the wood did not quite ripen enough to insure us a good crop, and yet there seems no certainty even in this. The next best regular crop we have seen of the Barbarossa, though the bunches were small, but well coloured, was in a small greenhouse at the Cemetery at Luton, under the care of Mr. Godfrey, the heat to keep out frost being supplied from a portable iron stove. On making inquiry about it the other day, we found the Barbarossa had been taken out, because though it fruited freely, it could not be ripened time enough so as to be cut before the house had to be crammed with bedding plants.

We confess that notwithstanding the immense crop, and the immense bunches of this Grape, under Mr. Scott's management, there is yet so much said, pro and con, of chambered borders, heated and unheated, that we feel sure that an account of Mr. Scott's views on the subject, from his own pen, would be acceptable to many readers besides the writer. R. Fish.

Errata.—At the end of Phœnix Park, page 90, state that in the figure representing the cross section the slopes should be shown sharp, not rounded. And at page 91, showing the mode of training, the two cross-sticks should be seen going over the mouth of the pot—in fact, that gives them steadiness.

ROYAL HORTICULTURAL SOCIETY.

November 12th.

Floral Committee.—A thorough November day, in which everything looked miserable, dreary, and dirty, with an atmosphere somewhere facetiously described as a cross between a Scotch mist and pea soup, in which colours were defiant of all attempts to define them, and with the room miserably cold, formed a congeries of circumstances not over-favourable, or too lively for a Committee day. I suppose the acting rulers considered that the ardour of the Floral Committee was sufficient to warm them; but certes a fire would not have been unpleasant, however delicate the compliment may have been, and yet there were some really good things there, and several high awards were given.

Mr. Salter, as usual, furnished a large number of seedling Chrysanthemums, both of the large-flowering sorts and Pompons. These comprised Duchess of Wellington (Salter), rosy lilac, with white back and petals, giving the flower a silvery lilac appearance. Lord Ranelagh, awarded a First-class Certificate, light red orange, beautifully incurved, but not sufficiently expanded, and so looked flat. Carissima (Smith), a sweetly delicate flower, blush white, streaked a little with lilac at the back of the petal, and in blooms which I saw afterwards at Hammersmith most decidedly so: this was also awarded a First-class Certificate, and will be quite a lady's flower. General Slade (Smith), an immense flower, beautifully incurved, colour an Indian red, tipped with orange: this had already received a First-class Certificate, and fully maintained its character. Sparkler, a very beautiful medium-sized flower, red chestnut with orange tips, incurved; very fine and distinct: this received a Label of Commendation, and will form a most desirable variety, its habit being excellent. Lucinda Pompon, rose and lilac, very full, will be better. Citronella (Smith), yellow hybrid. Acis (Salter), pale sulphur; fine, free, and full, and its habit excellent. Capella, very dark red chestnut; good habit. Medora. Brazen Mirror (Pethes), like Jonas. Sylphide, delicate lilac, tipped blush. Mr. Salter also sent Astelea Banksi, a curious-looking variegated plant in flower. Galeobdolon luteum maculata alba, Sanseviera carnea, fol. var., Japan, the true names—formerly known, Mr. Salter says, as Synopheopogon jaburnea! and a species of Begonia from Santa Martha, for which a Label of Commendation was awarded. It is a very large green-leaved variety, with a smooth, shining surface.

Mr. Bull sent Caladium maculatum, Chrysanthemum La Folie (yellow), Diamant (blush), and Madame Heine (white), something like Mrs. Turner, but with the white more pure (a Label of Commendation was awarded for this), and Agave americana elegantissima, beautifully variegated with white. This received a First-class Certificate.

From Mr. Low, of Clapton, came Dendrobium Lowii, from Borneo, a very beautiful and striking variety, of a lovely primrose, with a fringe of red hairs. This received a First-class Certificate, and adds another to the many interesting plants introduced by this enterprising firm.

Mrs. Redgrave sent nine plants of Solanum pseudo-capsicum, a plant much used on the Continent for in-door and table decoration in winter, when its bright orange red berries give it an interesting appearance. This is different from Solanum capsicastrum, the latter being more dwarf, and with broader leaves.

Dr. Neligan, of Dublin, a first-rate florist and enthusiastic cultivator, sent through Messrs. Dickson, Hogg, & Robertson, of Dublin, some blooms of a sport from Cedo Nulli Pompon, of a lilac colour, and which he proposed to call Lilac Cedo Nulli. The blooms were hardly in a fit state to judge.

Mr. Veitch, of Chelsea, sent Graptophyllum versicolor, a stove plant from India, with blotch in centre of petal. For this a Label of Commendation was awarded. Also, Stenogaster concinnum, a curious-looking Lobelia-like flower, very small (for stove), lilac tips to petals, and with the throat spotted. This had received at the June Show a Second Prize, it was now awarded a First-class Certificate, and was stated to have been in bloom since May. It was quite a gem for ladies, and would do admirably for Miss Maling's new cases in the front. The same gentleman also sent Alsophila contaminans, a species of tree Fern from Manilla. For this a First-class Certificate was awarded. Also, three pairs of the beautiful little Sonerila margaritacea, splendens, and superba. For these a Special Certificate was awarded; and some plants of the Wigandia caraccasana, noticed by me some time back as so much used in Paris at present.

Mr. Standish, of Bagshot, sent two first-class Ferns, Woodwardia orientalis, and Lomaria elongata, the former having fronds 4 feet in height, which when young are of a beautiful rose pink colour, supposed to be hardy; also Lomaria elongata, a very dark-foliaged variety, known to be perfectly hardy. For these First-class Certificates were justly awarded.

Messrs. Osborn & Son, of Fulham, contributed an Anœctochilus; and, finally, Mr. Rosher, of Regent's Park, very kindly sent a nice plant of Eucharis amazonica, a beautiful snow white flower mentioned by me as seen at Thibaut & Keteleer's, at Paris, and which he kindly brought in order to give persons an opportunity of seeing it. He uses it largely, and grows it very successfully, having it in bloom for six months in the year.—D., *Deal.*

Fruit Committee.—A Meeting of the Fruit Committee was held on Tuesday, November 12th, J. B. Haig, Esq., in the chair. A collection of Muscat Grapes was exhibited from Mr. D. Thomson, Archerfield Gardens, near Drem, N.B. They consisted of Muscat of Alexandria, Tynningham Muscat, Bowood Muscat, and an early variety of Muscat, which is supposed to be distinct from any other in cultivation. This exhibition was made at the request of the Committee, who desired to see all these varieties grown in the same house, and under the same circumstances, and to ascertain wherein the Early Muscat differed from all the others. The Muscat of Alexandria and Tynningham Muscat were long, tapering bunches, loosely set, and the berries were quite plump, and of a greenish-yellow colour. Bowood was a short, thick-set bunch, and the berries were much more advanced in ripeness, and had begun to shrivel and change to the brown raisin colour; but the Early Muscat was completely shrivelled, had lost entirely its yellow colour, and had become perfectly brown and raisin-like. The flavour was particularly rich, and the sweetness was much greater than in any of the others. In the opinion of the Committee this is a first-rate Grape, and deserves to be introduced into cultivation.

Mr. Thomas Smy, Henbury Hill, Westbury-on-Trym, sent a bunch of Barbarossa, and of Muscat Hamburgh. The latter was a very creditable bunch, large, and well set, and the flavour was rich and excellent, but the Muscat aroma was not so powerful as usual.

Mr. Melville, of Dalmeny Park, near Edinburgh, again submitted a small bunch of his seedling Grape, Champion Hamburgh Muscat. The berries were now much better coloured than on the previous occasion when the fruit was exhibited, and were of a uniform and even dull red or foxy colour. The flesh was firm, very richly flavoured, and with a fine Muscat aroma. This was highly approved by the Committee

Mr. William Masters, Nurseryman, Canterbury, sent a seedling kitchen Apple, and Mr. Bull of Chelsea, a seedling dessert Apple, but neither of them was considered worthy of being added to existing sorts.

Edward Godson, Esq., Heckington, near Sleaford, sent a dish of Knight's Monarch Pear, but they were as yet unripe, and appeared as if they had been gathered too early, as they had already begun to shrivel.

Capt. Tyrell, of Ealing, sent three dishes of Apples without [illegible]. One of them was a fine Pearmain-shaped fruit richly coloured with bright crimson stripes, and with a bloom over the base. There seems little doubt but it is Northern Spy. The others were unknown.

Mr. Dowden again exhibited the dessert Apple which was shown at last meeting under the name of Long Nose, from Dorsetshire. It is a small, conical fruit, with a yellow ground [illegible] russetting. The flavour had much improved by keeping, and the Committee were of opinion that it is an excellent dessert Apple.

Mr. William Paul, of Cheshunt, sent an interesting collection of vegetables, amongst which were several varieties of those beautifully-variegated Curled Kales, which seem to be coming so much into vogue, and which may very well serve not only as culinary plants, but as "fine-foliaged plants" for the decoration of pleasure grounds during the dreary months of winter. There were also in the collection roots of Chærophyllum bulbosum, about which it is now endeavoured to get up a sensation as being a substitute for the Potato. The roots were about 2½ inches long, and were about the size and shape of the small Dutch Horn Carrot. *Query.* What weight per acre will they grow? The Brussels Sprouts in the same collection were very fine, as were also the white Spanish Onions, and an immense Vegetable Marrow called Prince Albert Improved.

Messrs. Downie, Laird, & Laing, of Edinburgh and Sydenham, sent some enormous Leeks, called Henry's Prize Leek. They ought to be called the Truncheon Leek. They were finely blanched to the extent of 10 inches or 12 inches, and are a great advance upon any other variety we have seen.

ALTERATIONS IN AN OLD ICE-HOUSE.

I propose altering my ice-house (which at present keeps the ice very badly) in conformity with the plan described in your Journal of November 5th; but I wish first to ask a question or two.

Mine is a large ice-house; and, like that named by Mr. Beaton, has a passage leading into the side of the vaulted dome. This passage has an outer door and two inner doors; but the dome is perfectly air-tight at the top. I propose removing the two inner doors and placing a six-inch common tin ventilator in the outer one. Will this be sufficient as regards the door? and will a four-inch iron pipe let in through the centre of the dome, with a kind of umbrella cap over it, be sufficient for the top? If not, how large would you advise?

The ice-house is covered with a mound of earth, and has shrubs growing over it: therefore a mere hole into the dome would allow of dead leaves, &c., as well as any animal going down it. I have hitherto had straw placed round the sides of the well; this I propose to discontinue, as Mr. Beaton directs, and merely to cover the ice with it about a foot thick on the top.—A Subscriber.

[These are exactly the alterations I should recommend; but I would put a six-inch-bore glazed earthen pipe, or pipes, in the dome instead of iron ones, and I would have a bent pipe at the top—or one bending two ways—which would be better among shrubs than an umbrella cover. Also, as the house mound is covered with shrubs, try one-half of it with straw down the side, by way of experiment, and note how the ice on the strawed side endured compared with that against the bare walls, and let us know the result.—D. Beaton.]

GLADIOLI.

You would confer a favour by giving a list of the early and also strong-blooming Gladioli; the Gladiolus being a plant that blooms at such varied periods it is almost impossible to get six or eight blooms or spikes in a small collection at the same time.

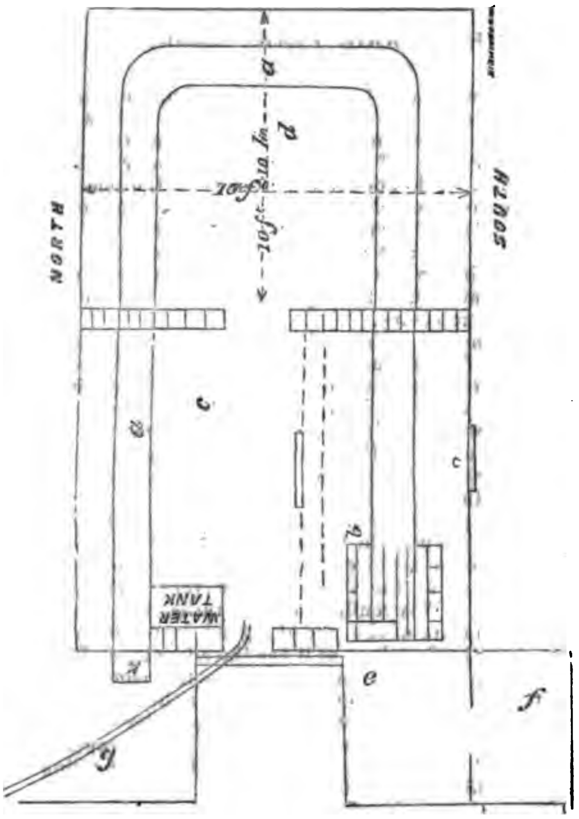
During the late summer such varieties as Don Juan, Mons. Blouet, Canari, Janire, Pallas, Brenchleyensis, and Fanny Rouget bloomed the earliest (August 20th, the above were exhibited), and I have had blooms, not more than one or two at the same time, up to the present date. This morning, November 4th, I cut a splendid spike of Adonis, and have several more to bloom.

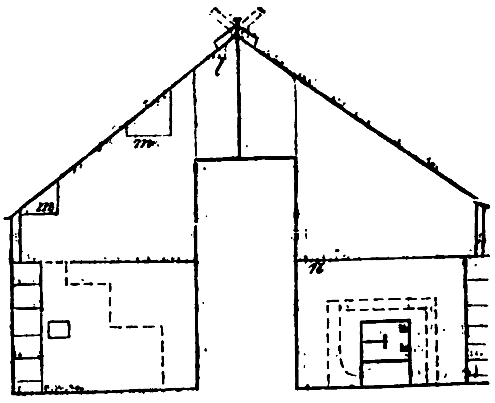
The Gladiolus, like the Tulip, seems to enjoy the soil and atmosphere of the north, and for this reason has become a great favourite and much admired.—J. Blacklock, *Sunderland.*

[The flood of new Gladioluses, and the rapid disappearance of the old kinds, render such a list as you want very uncertain. We have consulted the heads of the Gladioli fancy, and this is their verdict. But Mr. Standish, the largest raiser of them whom we know, has promised to set apart a piece of ground next year on purpose to prove the earliest, the middle season, and the late-flowering ones for the use of his own customers and our subscribers.]

CONSTRUCTION OF A PIT.

The several articles in your Journal upon pits and greenhouses have enabled me to build the following pit, of which I give you the particulars for your criticism, and also for the benefit of your subscribers, should you think it of any service to them.





a b a, Flue.
b, Suggested enclosure for hot-bed.
c, Place for bedding plants.
d, Warmer part.
e, Steps to furnace.
f, Fuel.
g, Drainage.
h, Door.
k, Chimney.
l, Glass ventilator on pivot.
m, Shelf.
n, Hot-air chamber.
o, Slide to admit air.

It stands with its ends fronting east and west, as the position would not admit of its being placed, as you prefer, with its ends north and south. It is 22 feet long and 10 feet wide, inside measure, and 8 feet 4 inches high to the ridge-board.

It has hollow nine-inch walls 4 feet high, 2 feet 6 inches being sunk below the ground level, and the bottom is well drained by a layer of coarse stones, with smaller ones at top, and a drain leads away any water that may percolate down the outside of the walls below the surface as also the waste water from the roof.

Upon the walls is placed a frame 5½ feet by 2½ feet, in which sashes are hung containing 1 foot of glass opening outwards. The lower part of this frame forms the wall-plate, and the upper the plate for the rafters, 2½ feet by 1½ foot, and 6 feet 4 inches long. The ridge-board is single, but has an opening on each side of it 4 inches wide, formed by the rafters not being glazed there, and covered with a six-inch flap opening by a pulley inside, which flap shuts down upon the rafters and upon a metal bar inserted between each, and having a flange to receive the glass, similar to the metal bars now often used for sash windows instead of wood ones.

The eaves-board for receiving the lower part of the glass is 5 feet by 1½ foot, and underneath is a trough for the rain water, emptying into a slate tank in the house, having an overflow into the drain before alluded to.

The pit is divided in the centre by a wall of brick-on-edge carried up as high as the outer walls, and with glass for the remainder, with a door half of glass. Here there is a larger rafter, as well, also, as at the two ends, 3 feet by 2½ feet. In each division are six sashes, three on each side, all opening outwards. The door is at the west end, and over it there is a window opening outwards.

It is heated by a flue made of two bricks on edge set on foot-pavements, and covered with similar ones, and standing about 18 inches from ground level. The furnace is inside the west end, but fed from without. It is 18 inches long, with a dead plate in front of the bars 6 inches wide, three bricks on bed deep and 14 inches wide. The furnace-door with a dead plate in front, and 1½ inch from the outer one, and the ash-pit door with a regulator. The flue rises 16 inches in a gentle slope from the furnace-bars to the bottom of the flue, and runs along the front, east end, and north walls, 1 foot from the front, and 6 inches from the others, having a rise of 9 inches in its whole length to its entrance in the chimney, where there is a damper. This flue draws admirably. I have had a stage with three steps made of splices as described in the Kimpton Hoo House, Vol. XX., page 55, for the back or north sides of the pit, and there is plenty of room for a shelf suspended from each side of the roof over the path. The space for stages is 3 feet 4 inches on each side, and for path the same width.

Would you advise these stages to be covered with sand or pebbles in the summer? as if so, by then inserting an extra splice between the others the sand would be retained.

Round the furnace about 2 inches from the fire-bricks is a wall, which is carried up about 6 inches above the top of the furnace, and with a stone over it, forms a hot-air chamber 3 feet square, upon which I can place sand and a hand-light, affording a striking-bed for cuttings.

My object in having a division in the pit was to have bedding plants in one part, and more tender plants in the other; but unfortunately I was obliged to have the entrance at the west end, and the furnace there, and this is the hottest part of the flue, and here I get more heat than is requisite for the bedding plants; the flue on the north side being nearly sufficient.

Now, I want your advice as to the best plan of using this part of the flue. After reading Mr. Beaton's article in your last Number, it occurred to me, that if I surrounded the whole of the flue from the neck of the furnace, by continuing the wall now round the furnace, brick on edge, along the front of the flue up to the wall forming the division, and then covered it as Mr. Beaton does, I should have a length of bottom heat which would be useful for setting Roses and spring bulbs upon; and by having a slide in the chamber so formed, I could admit hot air into the pit if wanted; and on the contrary, by having a slide in the outside wall, could admit cold air if the chamber was too hot. With this plan would there be top heat enough for the things having the bottom heat? As the other part of the pit would be the warmest, the plants in the bottom heat after being started could be removed there, and when I was not forcing anything, the outside slide and a deeper covering of earth would keep down the heat in the first or cool division. Would you say if you think my suggested mode of appropriating this part of the flue is feasible? On the opposite side I send you a sketch of the ground plan and west-end elevation of the pit.—C. D. DANVERS.

P.S.—I have not made any provision for letting cold air into the chamber except to cool it, as I do not want a circulation of hot air into the house; but I could easily admit cold air by taking out a part of the brick outside by the furnace-door.

[I am sorry that the answer about cold pits was sent off two days before this letter from Mr. Danvers came. I could hardly find fault with it, as he seems to have carried out what I have so often recommended; but, having described the minutiæ so often, perhaps I have not been minute enough as to building, &c, and his letter to a person who does not wish to go back to other volumes will give him all he needs. The flap for back air will do very well, but if glazed it will look neater. The mode of heating by flue is also the same as mentioned the other day, where it would not be convenient to get down for a stoke-hole—that is, taking it round the sides and the farther end. The plan shown of a flue in the middle is meant to be applicable only to a house for bedding plants; and knowing that the one stout flue would be sufficient for that purpose, the want of it on either side would permit of many things being kept below the flower-stands without being promaturely excited into growth. If we took a flue all round we should build it on the firm or concreted ground, and not raise it from it, as that adds greatly to the expense. We think the graduated stage on the north side will be too low if there is to be a level platform on the south side as high as the glass; it would be a different thing if there was a similar stage on the south side, as at Kimpton Hoo.

There is less gained by having the furnace inside the house than is generally imagined; the heat will be sure to go forward, and a yard or so immediately over the furnace and plate will be cooler than a yard farther on. However, we prefer having a place to light the fire outside unless a house is large enough to permit a small place to be shut off to keep all the dust there, and enable a fire to be lighted comfortably on a dark wet night.

It has been repeatedly shown how a space round a flue may be turned into a hotbed, and it is a great gratification to us that whenever our friend Mr. Beaton takes up a subject, he not only throws light upon it, but imbues other people with a portion of his own enthusiasm. After thinking the matter over for ten minutes, we think there are two best ways which you may adopt for keeping bedding plants and having a forcing-pit in the same division. The first plan would be to shut off the front part with a division of sliding sashes, as mentioned in answers to "N," page 71, paragraph 10. The second and best would be to have that front part made into a pit, by taking a wall up at the pathway, either high enough to put sashes on it, and on a rest at the front wall; or just low enough to enable you to place a wooden box on it supplied with small sashes. This would be better than having hand-lights, though if you liked, the roof of your box might be ridged instead of flat or sloping; the front being fixed, and the back moveable for air and work. If any of these should be decided on, we would make the flue wider and stronger there, and then make open dry flues from it to the front wall, and the wall at the path with brickbats and clinkers, and raise with rough stones 6 inches above the flue. You can either pour moisture among these stones for bottom or top moistures, or you can have a slide as you propose, and have an evaporating-pan, as Mr. Beaton proposes; and by means of an open funnel or two inside you can let up dry heat and moist heat as you wish. With such a contrivance, and a covering—say of woollen cloth, and calico underneath to throw over the glass on a cold night, you could easily keep such a place at from 60° to 70°; whilst by the admission of air you could have your bedding plants at 40°. I forgot to say that the rough stones should be covered with clean gravel, and then with sand; but if you could get such a thing a little tan would be excellent for setting your pots on or in.—R. FISH.]

DESTROYING THRIPS.

I HAVE some Azaleas infested with thrips, and have fumigated them with tobacco paper until I nearly killed the plants, the leaves appearing as if burnt. I have syringed them with a mixture of sulphur, soft soap, and tobacco water, and, lastly, have immersed them in a tub of tobacco water, allowing them to remain quite under water two hours, and after all these appliances the thrips are still alive. What more can I do?—YOUNG'UN.

We hope you kept the pots and the soil out of the tub, or we would not give much for the plants. Yours is one instance out of many of the more than nine stitches being required, when one timely one would have saved all the bother. You very likely killed every thrips alive; but as you did not, and could not, well scrub every part of stems and leaves, you left myriads of eggs ready to be hatched under favourable circumstances [illegible] plants [illegible] still likely [illegible] would not some size water, just as much size being in the water as will make it feel sticky between the fingers. Heat it to 140°, and immerse the whole of the head of the plant in it. Then take it out and leave it in a shady place for three or four days, then shake it well, and wash thoroughly with warm water. Keep a cloth over the pot.]

THE IN-DOOR PLANT CASE.—No. 2.

(Continued from page 131.)

I PROCEED to-day to give a minute detail of the proper management of one of these cases when it is wished to keep it at stove temperature, that temperature varying in summer from 85° to 65°, and in the winter from 65° or 70° to 55°. I do not myself often have the temperature much higher, though one night when the room temperature was below freezing in the place where one stood, I raised the heat at eight P.M to 90°, and found it at nine next morning to be 65°. This was, of course, much too great a heat to use, but I just wanted to see what could be done if necessary.

The principle, as far as I had a principle, in the construction of these cases was to heat so large a body, and to economise so carefully the already heated air as to render the escape of heat, which had been once attained, a very slow proceeding. At the same time, working in so small a compass, the roots of the plants were exposed to too great heat unless well protected by a thick layer of sand, this sand was, therefore, made to serve two purposes—protecting the roots and retaining heat. My usual plan has been to fill the plant case with hot water to the amount required very early each morning, and then as soon as the water became very nearly cold to refill again. This refilling, if done rather late, maintains the temperature of the case at a good degree for a longer time than the first does, as it has the advantage of finding the case quite warm. And here lies the chief variation for the coldest weather—by giving a little fresh heat half-way through the day, we maintain the day temperature at a higher degree, which is always proper; and are able at the same time to delay the night-filling till as late as nine or even ten o'clock.

I have also made great variations in the quantity of hot water used. A single water-can full put in in the early morning and late evening is all I allow at the present season for a warm greenhouse temperature. But the sunshine, when there is any, brings up the heat immensely, so as often to render the night-filling unnecessary, except for giving air; and when there is no sunshine it must be remembered that the heat ought to be lowered. So much, then, for actual heat given for heat's sake.

We now approach the question of air-giving; and when a certain temperature much above that of the room is required, it is evident that a greater degree of heat will be needed to make up for and supply, the absolute waste, caused by the equalisation of temperature constantly going on.

On many occasions, as when the heat of the sun alone would tend to raise the temperature to a sufficient height, the hot water may be given only as a means of supplying air,—keeping the whole of the front panel out entirely, and only closing it soon enough to retain a degree of the warm moist atmosphere with which the case gets filled.

It need not be feared on these occasions that the air will become too dry. The entire shelter afforded on three sides, as well as at the top, will suffice to prevent this happening. When a whole panel is thus removed, I think it should be the front one—not the top. Though when only a little air is left on I have found it very desirable that this should be at the top, raising the edge a little by the pin provided. And it is an unqualified certainty in the management of these cases that the more air that can be given at one side or at the top (never in two places together) without reducing the heat below what is absolutely necessary, the healthier, and the better, and the more luxuriant will the plants be in their growth.

I very often myself, after keeping the front panel entirely out all day, leave the pin up to its full extent, at night, when it is put in; but numerous modifications of these plans must be tried, no doubt, the circumstances varying as much as the weather and the kinds of plants.

When the case is covered at night, as it should always be in cold weather, with a thick woollen covering, the air may still be left on below it. Any arrangement also by which a slight stratum of air is left between the woollen cover and the case is useful; the atmospheric air being, as all the readers of this Journal must be well aware, a remarkably good nonconducting body. The thing is so essential that I must once more repeat that, whether by day or night, whether in hot weather or cold, the more air that can be given consistently with maintaining the degree of heat and moisture requisite for the plants the better assuredly they will grow and thrive. A small thermometer hung up to face the glass about the middle of the case will give information as to the heat, without its being necessary to take out or unclose the glass,—which taking out the glass is sometimes most undesirable, as, for instance, on a very cold winter's night, when the warm air within has to be preserved most carefully.

The moisture is not by any means a difficulty; the sand being kept just not dry, it is impossible to have warmth, especially from the bottom of the case, without some vapour rising.

Even when the case is open at the side there is generally enough moistness remaining in the air, as in a place so entirely confined and sheltered there is no rapid circulation. The only precaution necessary is not to open the side of the case standing next to and immediately in front of an open window on a hot, much less on a breezy day. At all times, indeed, it is a thing as well avoided, and for residents in London, Brighton, Edinburgh, Glasgow, Leeds, or Birmingham, who may use these cases, keeping the open side away from the open window will be always preferable. I name these towns because I know each to be noted for the love of flowers that reigns there, and in some because of smoke, in Edinburgh because of the keen winds to which the eastern coast is so generally liable, and in Brighton and all other coast towns because of the salt breezes which are so hurtful to vegetation, I feel convinced that my caution will not be unneeded.

I think it is well to mention that in the Plant Case exhibited at Kensington Gore one or two plants in blossom were added which would properly belong to the greenhouse temperature. The Camellias and Heaths last, however, very well in the warmer cases when forced forward much, and it must be remembered that a strongly-forced plant, even though a hardy Rose or Deutzia, is for the time as tender as its exotic neighbours.—E. A. M.

(*To be continued.*)

CINERARIAS AND PASSIFLORA SEEDLINGS IN A SITTING-ROOM.

SOWING PANSY SEED.

I HAVE about eighteen seedling Cinerarias which I raised in June; I have no place to keep them in but a sitting-room, which I have brought them into every night for the last fortnight. During the day I keep them at the north end of the house on a stage. We burn gas in the room at night, and since I brought them into a room several of the plants have begun to curl in the leaf (inwards). Do you think it is the gas that is the cause of it? They were fine healthful plants before. They are in sixteen-sized pots and coming into bloom.

I have several seedling plants of Passiflora cœrulea raised in June. I have them in pots, and keep them in the same place as the Cinerarias. Will they flower next year if I get them forward in spring? I have one plant of this Passiflora that I raised in the spring of 1860, I have it planted against a south-east wall in rich garden soil; it grew some 8 feet or 10 feet high this summer, but did not flower. I have cut it back within about 1 foot of the ground and intend to protect it during winter with mats. Have I done right? The district is about ten miles south of York.

What would be the best time to sow Pansy seed to have a good bloom by the middle of August?—C. E. W.

[Your Cinerarias may suffer from the gas; but more likely from the dryness of the room. Without seeing the plants, if they are showing bloom, we think you would have more success with them in half-the-sized pots—that is, thirty-two instead of sixteen. We would recommend you placing your plants in the sitting-room window during the day, and the pots to stand in saucers, with moss in the bottom of the saucers, and to keep that moss a little moist; and, then, if you do not mind a little labour, move the pots at night where they would be safe from frost, and receive little artificial heat of any kind.

It is not likely that the Passifloras will bloom until 1863; but it is possible. The plant you have now cut down, if protected from frost, will give you a good shoot next season. We would only encourage one. Next autumn we would have it 8 feet or 10 feet high, and either protect it so, or roll it in a mat, and protect the roots too. The year following the shoots that come from that stem may be expected to bloom, and you will have fresh flowering shoots every year by pruning back to within two buds or so of the same stem.

Sow the Pansy seed in your room in March, harden off and transplant out of doors in April and May: this will give you stronger plants than sowing out of doors at once.]

VISITS TO SOME OF THE FRENCH NURSERIES.—No. 3.

VERSAILLES.

THE inhabitants of this environ of Paris never can imagine that anything but a desire to see its grand château could ever bring an Englishman to their terminus; and even if I could have hidden my country, the portly presence of my excellent companion is so unmistakeably English that we were at once proclaimed as such, and proffers of assistance of all sorts were freely made to us as we *debouched* from the railway, to the infinite disgust of all concerned. However, we declined the honour; on that day the château had no charm for us; its long galleries remained unvisited, and its gardens and orangeries unnoticed. We were bent, at least my friend was, on business; and I followed in his wake—my eyes and ears were to be employed while he discussed the weightier matters of business. We were bent on two visits; but, as one of the friends was absent, we had to take it on a second day. I shall, however, include them both in the one notice. One (M. Rémont) is a gentleman but little known in England, though an ardent admirer of her liberty and laws; the other whom everybody knows, by name at least, M. Truffaut, the originator of those tasselled or French Asters, which have been such a boon to our gardens and such an ornament to our autumnal exhibitions. The nursery of

MONSIEUR RÉMONT

is of a very extensive character, his grounds comprising nearly 400 acres, and containing every kind of forest tree suitable for France, and a fine collection of Conifers. Everything is grown in very large quantities, inasmuch as he is extensively employed in planting the various lines of railways which now traverse France in all directions. The embankments are thickly planted, especially with the various species of Acacias. Some idea of the extent of his operations may be attained from the single fact that he has planted nearly 400,000 trees in the Bois de Boulogno alone. This year he has been peculiarly busy, and in one sense unhappily so, for we were here introduced to the ravages of the terrible "ver blanc," or grub of the cockchafer, which has oftentimes caused devastation in this country, but whose ravages I had never before seen to such an extent. Whole plantations of Wellingtonias, for instance, were decimated by them, the wretches with their very powerful mandibles completely barking all the larger roots and cutting off the smaller ones, so that plants that were looking healthy and vigorous a few days before all at once turn yellow and wither away. It was the same with other species, and in the case of softer herbaceous plants the root is completely eaten through. Thus Truffaut has lost thousands of his Asters this year, and I saw in their ground, in about half-a-dozen yards where Gladioli were being taken up, a large pot—about a 16—filled in with the nasty ugly-looking vermin. The neighbouring forests attract them, and then, when the ground is broken up and in good condition, they attack it, while the absurd mania in France for killing everything in the shape of a "petit oiseau" for the sake of the table has deprived them of a very useful auxiliary in getting rid of the grubs of this and various other hurtful species.

Talking of this, I saw in Paris a curious-looking piece of mechanism which turned a piece of wood full of various coloured glasses, and on inquiry found it was used for "catching larks," this being said to attract their attention, to such an extent do they carry these bird-killing propensities.

Another tree cultivated by the million is the Ailanthus glandulosus, latterly rendered somewhat more notorious by its being the tree which the new species of silkworm feeds upon, and about which some of the French *savans*, who wildly premise everything, have been so enthusiastic. Unfortunately, at present, it seems very much in the condition of the Irishman's horse, when caught, good for nothing; for though it is hardy, lives and spins its cocoon in the open air, at least in France, no satisfactory method has yet been obtained for winding off the silk. I have one lying before me now, and a more unpromising-looking cocoon I never saw. However, French ingenuity may overcome it as well as Chinese, unless indeed we get the information from them. Monsieur Rémont has just taken a new château, with a large quantity of the finest land in the neighbourhood of Versailles, and he is now very busy in getting some portion of it ready for nursery stock.

MONSIEUR TRUFFAUT'S

is an establishment of the very opposite description. His ground is small, and he cultivates mainly a few things, with some of which he supplies regularly the Paris markets. Of Amaryllids he has, I suppose, the finest collection in the world. He has hybridised them very extensively, and has now upwards of 400 varieties. They are grown in beds under glass, and some of them are exceedingly fine both as to size and colour. One variety, acuminata, had upwards (this season) of sixteen expanded blooms on it at the same time. When this long pit, with upwards of 2000 bulbs, is in full bloom, it must be a very fine sight. Another bulb which he very largely cultivates is the Persian Cyclamen. This is grown from seed; the seedling plants are pricked out into frames filled with suitable compost, and protected from the frost. They are, when the bulbs obtain a fitting size, taken up and potted, and are done so well that he can sell them for about 5*d.* and 6*d.* each, the larger-sized bulbs at 10*d.* and 1*s.* They are a very favourite flower, and deservedly so with the Parisians, as they stand the atmosphere of a sitting-room well, continuously bloom, and, some of them at least, are very fragrant. Mons. Truffaut also grows Rhododendrons much for the same purpose. We do not find anything like the extensive grounds of Bagshot and Knap Hill; but he culls such varieties as are showy in character and free-blooming, and these, as soon as they attain sufficient size, are also sent off to the Paris markets. The flower, however, with which his name is most associated is, as I have said, the tasselled or French Aster. The whole of his seed is sent to Vilmorin, Andrieux & Co., and by them distributed; but by far the larger proportion of this seed is now obtained in Germany, as most purchasers know from the curious-looking packets in which they receive them. They evince great care in the selection, as anybody may very well testify from the excessive truthfulness with which they come. They, moreover, select the largest and most vigorous-looking flowers and seed them, and do not leave many on each plant. I noticed also a good number of a pretty bulb allied to the Tigridias, Rigidella orthantha, by no means new, but I cannot recollect having seen it flowering in England; and having a *penchant* for bulbs, it struck me as likely to be a nice thing. The Camellias also were in very good order, and the whole grounds very neatly kept.

I heard here the same complaint that I have noticed in Paris—the decline of amateur gardening in France. In the suburban villas, where in our own country this taste so manifests itself, one notices, all around Paris either neglect or else the space occupied with vegetables and shrubs. Doubtless the habits of the French have much to say to it; home has little charms for them—the Café and the Boulevards far more. The French paterfamilias cares but little for the exterior of his villa, and would probably consider it great extravagance to expend anything upon it. Such a state of things would be fatal to horticulture here, as I have often heard sellers of flowers say their best customers are amongst this class. We are fond of copying our lively neighbours; but I am sure all readers of THE JOURNAL OF HORTICULTURE will wish it may be long ere we copy them in this.

Thanks to Mr. Beaton for his notice of Phaseolus; but is it to be given up? If unceased attention has conquered Bougainvilleas and Disa, why not Phaseolus? Let Mr. Leach try his hand at it.—D., *Deal.*

ADORNMENTS AT THE ROYAL HORTICULTURAL SOCIETY'S GARDEN.

Over the entrance to the new gardens at Kensington are the names of six great botanists. Would not the name of the great Loudon (who did more for gardening and gardeners than the whole family of botanists), or even of good old Abercrombie, be more worthy of such a position in a horticultural garden than any of them? What are the names of these botanists there for? If, as Mr. Robson has shown, horticulture is scarcely to be found there, botany is in much greater obscurity.—WILLIAM ROBINSON.

[We quite agree with our correspondent that the names of some of our most celebrated deceased gardeners would be more appropriate at the Kensington Gore Gardens, than those of botanists. At the same time we would not exclude these. Gardening is too much indebted to botany not to admit memorials of its chiefs among her records.

The names of Miller, Abercrombie, Loudon, and of a few other leaders among our departed gardeners ought to be there, and especially that of Mr. Knight, the Society's first President, who so pre-eminently advanced horticulture by his combination of "Practice with Science."

We should like to have busts of them all placed in the conservatory. Whilst on the subject of statues, we must express our hope that those most offensive figures of Venus and the Satyr will be removed from the colonnade, and banished from the garden. It is a group indelicate; is out of all proportion to the mole-hill of rockwork on which it is placed; and would be misplaced in any part of any garden—superlatively so, therefore, in a garden which ought to be a model of good taste.—EDS. J. OF H.]

SHORT'S PLAN FOR AVOIDING THE POTATO DISEASE.

OUR experiment of Short's plan for the prevention of the Potato disease was a failure. We began covering the ridges the last week in July; the spit of soil put on most effectually sealed up the tubers; when the dry weather of August came they could reap no benefit from it. They were taken up about the middle of September, neither so fine nor so clean, with many more diseased ones, as the produce of a piece left uncovered.

July brought the disease in our neighbourhood, and fears were many that the Potato crop was a doomed one, but August came and altered the aspect of affairs, and the crop is an average one.—N. H. P.

OUR CULTIVATED NATIVE PLANTS.

GARDENERS AT THE ROYAL HORTICULTURAL SHOW.

I AM very fond of British plants, and am a successful grower of the Lady's Slipper, as you would see in last volume of the Journal. I am now trying to grow successfully the Primula farinosa. It grows best in meadows with a boggy or wet soil lying on limestone, in open situations, where it must get baked at times, drowned at others. I also have Balsam (Impatiens Noli-me tangere), it is indigenous here.

Allow me to suggest that some notice ought to be taken of the very dirty dress and appearance of some of the gardeners (apparently) who were at the Royal Horticultural Show last Wednesday. I was there some hours, and was disgusted to see some unclean—*i.e.*, unwashed and unbrushed fellows elbowing amongst the ladies' nice dresses. I am a great advocate for admitting gardeners at the best time to all shows, as it clean-their minds of a great deal of self-opinion, and I like them to hear the remarks made by ladies and other visitors of high degree; but let them show that they appreciate that privilege by at least brushing up their garments, even if they be threadbare; and soap and water surely are cheap enough. In this part of the world (Lancashire) gardeners trim themselves up, and would have felt ashamed to have gone in as dirty condition as I saw two or three, who evidently might be good gardeners by the way they criticised the Chrysanthemums.—W.

CHEVREUIL'S MODE OF GROWING MUSHROOMS.

I HAVE copied from the *London Review* the enclosed plan for increasing the growth of Mushrooms. Would you be so kind as to explain the two places I have underlined? By the term "plaster," is lime plaster meant, or is it wet, muddy earth?

By the Latin term is it meant something adhering to the white stem of the Mushroom, and which can only be detected by a magnifying glass?—J. HUDSON.

"Mr. Chevreuil has recently exhibited to the Academy of Sciences the result of a plan adopted by Dr. Labourdette for obtaining Mushrooms, in the shape of an enormous mass of these fungi weighing 8 lbs. on a single stem, which has sprung up in the short space of six days. The plan of culture is as follows:—On a piece of marshy ground he spreads sand or gravel to the depth of 7 inches or 8 inches, on this he forms a *second bed of plaster* about 8 inches thick, and spreads over this two grammes of nitrate of potash to the square yard. From the white part of the Mushroom he extracts by means of a magnifier, the most *developed mycelium*, and sows it on the surface of the bed. The germination soon commences, and the vegetation becomes very active, and in a few days the bed is covered with monstrous Mushrooms. The action of the saltpetre lasts for six years, and the Mushrooms as rich in nitrogen as the best food, form a very substantial nourishment."

[We do not know what the "plaster" is. There must have been some preceding statement which our excellent contemporary has omitted. The Latin term "mycelium," is the botanical name of the spawn or white filaments which give birth to the Mushrooms.—EDS. J. OF H.]

ENTOMOLOGICAL SOCIETY'S MEETING.

THE October Meeting of the Entomological Society was held on the 7th ult., and was presided over by J. Lubbock, Esq., F.R.S.

Among the donations to the library received since the last Meeting, were the publications of the Royal and Zoological Societies, the Philosophical Society of Liverpool, the Smithsonian Institute, and the Royal Society of Munich.

Mr. Pascoe, on his return from a twelvemonth's residence on the Continent, exhibited a very interesting series of Coleopterous insects collected by himself in the south of France, and amongst which were two new species of Blind Beetles, Anophthalmus Raymondi, taken in the cavern of a monastic establishment near Hyeres, and an Anillus, found under very large blocks of stone deeply embedded in the earth.

Mr. Waring exhibited some beautiful specimens of Moths, captured in Inverness-shire during the past summer, including Noctua sobrina and Ypsolophus juniperellus. And Mr. Miller a remarkable variety of, or possibly a new species nearly allied to Ephyra undularia, reared from a caterpillar found near London.

Professor Westwood exhibited a specimen of Myrmecolax Nietneri, a remarkable parasitic insect belonging to the order Strepsiptera, from Ceylon, which he had extracted from the body of a Worker Ant sent to him by Mr. Nietner. A specimen had been previously received and described; but it had been almost entirely destroyed by Mites on its passage to this country. He also exhibited specimens of the eggs and larvæ of two Dipterous insects belonging to the genera Volucella and Anthomyia, parasitic in Ants' nests. The eggs of the former insect had been exhibited at a previous Meeting, affixed to the outer covering of the Wasps' nest, and had been mistaken for the cocoons of some minute insect. Likewise specimens of the larvæ of the Social Moth, Ilithyia sociella, with a mass of its cocoons, found parasitic in the nest of the Humble Bee, Bombus sylvestris, which had been communicated to him by Mr. S. Stone, of Brighthampton. He also read descriptions of some new exotic species of Stag Beetles, Lucanidæ, from the collections of Major Parry and Mr. Bakewell.

Dr. Wallace gave an account of the contents of an old cabinet of Lepidopterous insects belonging to Mr. Baker, of Suffolk. It was interesting, as containing amongst the Butterflies specimens of Apollo, Podalirius, Virgauræ, Chryseis, and Acis, of which the localities were recorded; also, various very rare Moths, including Sphynx celæno, Eulepia grammica, Plusia illustris, &c. Some of these species had been struck out of the British lists by recent Lepidopterists, but Dr. Wallace thought it possible that they had really been captured in the localities indicated, and that they might reappear as other species had done; which had been too summarily rejected from the lists.

Mr. Stainton read a paper on the nomenclature of a small Moth, Laverna langiella. And Mr. Waterhouse communicated a memoir on the synonymy of three species of British Coleoptera, belonging to the genera Homalota (H. subterranea), Aploglossa (A. rufipennis), and Ceutorhynchus uliginosus.

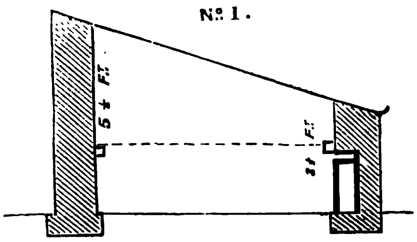
Dr. Knaggs exhibited various larvæ of the Moths forming the genus Eupitheciæ, some of which were singularly infested with parasites belonging to the family Ichneumonidæ. These had been transformed to the pupa state, enclosed in cocoons, leaving only the thin semi-transparent skin of the caterpillar distended by these parasitic cocoons.

CONSTRUCTION AND MANAGEMENT OF COLD PITS.

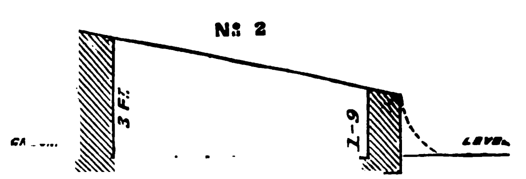
YOU will greatly oblige me if you will give me a few plain and minute directions as to the making and management of a cold pit—*i. e.*, a pit to winter my cuttings, Calceolarias, &c., in. I have an ordinary two-light frame. I am quite a beginner in gardening, and know next to nothing of the subject. I find, however, that my man knows even less. Such information as I ask for would, I think, be acceptable to many of your subscribers just now?—ALPHA.

[There has been so much said on that subject lately, and the relative importance of sinking them and building them on the surface, and the great inferiority of pits to small houses where pleasure and comfort are considerations, that I might well refer you to a long index, not forgetting the interesting paper on this subject a week ago by our friend Mr. Beaton, who, I have no doubt, will make the plan answer admirably, though it might be a little puzzling at first to young beginners like "ALPHA," and his, no doubt, anxious assistant. I am afraid that, be plain and simple as we will, we do not at all times make things easy enough to some of our inquiring correspondents, for it is impossible to make gardening operations as regular as measuring a yard of cloth, or writing out a summons or an indictment—in other words, nothing that we can say can ever render gardening successful without the constant thoughtfulness and unremitting attention of the gardener. In the case, especially, of all plants that will not stand the vicissitudes of our climate, the want of attention for an hour may wreck all the labour of the season.

So far as Calceolarias are concerned, there could be no place better for keeping them in during winter than a two-light box or frame, provided by secure covering in frosty weather, as all bedding Calceolarias do best afterwards, if they never know what fire heat is. In all fine sunny weather when the air is mild, air should be given freely, even to the sliding off the sashes. In sunny frosty days when the air is cold and above freezing in the shade, give air at the back only, by tilting up the sashes 2 inches or 3 inches and shutting up early in the afternoon. In dull muggy weather if the thermometer averages 40°, give air top and bottom by raising the sashes an inch or two. This will let air go right over the plants, and yet prevent rain falling on them. These same rules will apply to all plants kept in cold pits, for a frame with sound wood from 1½ inch to 2 inches thick, will about keep out as much frost as a nine-inch wall; but most other plants required for bedding, will require even more care to prevent damping as well as to be secure from frost, and this damping is the great enemy to all beginners and becomes a difficulty, when, as last season, it would not be safe to uncover for a month. To avoid this damping, whatever the material used for keeping out frost, it would be important to have a waterproof covering to throw the rains past the frame, or pit, in frosty sleety weather, as even the nonconducting properties of a covering, be it mats, hay, straw, &c., are much impaired whenever they become wet.


N.º 1.

Now, as to pits, sunk or just placed on the surface like a frame, bricks merely being substituted for wood, the circumstances of the case must determine which is best. For instance, in a cold exposed place, and where the subsoil can be rendered dry easily, a sunk pit like *fig.* 1 would be the best—say 5½ feet high at back, and 3½ feet in front, the pit being 2 feet below the ground level. This will give plenty of convenience for covering the glass in frosty weather, and also moving the sashes back and front. The walls of such a pit might be solid 9 inches, but I should prefer them to be 14 inches hollow. With such hollow walls it would take a long-continued severe frost to go through the walls; whilst a few days' frost ranging from 10° to 20° below the freezing-point, will penetrate a nine-inch wall: hence, I have known plants ruined in a cold pit with abundance of covering over the glass to keep out the frost, just because the brick wall was not thought about. In a hollow wall the enclosed air prevents the conduction of heat, and, consequently, such a wall will be also colder in summer. Taller plants could also be grown in such a pit, and receive more light than in one equally deep built on the surface. In building, a ledge should be left out of 2 inches or 3 inches, back and front —say 20 inches or 2 feet from the bottom, for receiving a platform of boards, and there most plants would be kept safer in winter than standing on an earthen floor, as there would always be air beneath them as well as above them, and that body of air would prevent such a pit from being either so suddenly heated, or so suddenly cooled as a shallower one. Of course, it would be a great advantage if such a pit could be heated by hot-water pipes or a flue, but then it ceases to be a cold pit. If the pit is not more than 30 feet to 40 feet in length, a small flue would be the easiest and cheapest mode of heating it, and the flue could be built in the wall, leaving an open space over the top to let the heat freely into the pit, and if there is an open space, however small, shut in between the outside of the flue and the outside wall, very little of the heat will find its way outside. If the water that falls on the glass is of consequence, then the cheapest plan would be to make a groove channel in the wall-plate; but if the water is of no consequence, then we would have the wall-plate to extend beyond the wall a couple of inches, and on the lower side, half an inch from the front, cut a groove a quarter of an inch wide and the same in depth. This will prevent the water trickling from the wall-plate to the wall, and loosening the binding-lime there. We recently saw some fine pits the other day that had none of this weather-groove. Most of the water will thus be thrown past the wall, but to make sure we would paint the front wall with tar, and raising the ground to the wall in a slope for a yard or 4 feet, we would place a layer of tan there, one-twelfth or one-eighth of an inch thick, and then covered with gravel and rolled firm, no water would either get through the wall or the ground near it.


N.º 2

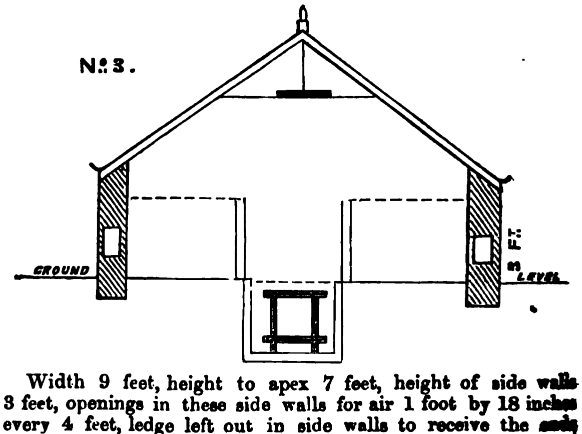
All that has been said as to spouts and walls will equally apply to *fig.* 2, representing a pit built on the surface, where it would be unsuita[illegible] go down, unless from water and other causes to fare [illegible] This we suppose to be 3 feet at back and 1 foot 9 inches [illegible] above the surface level. We have also [illegible]

hollow. If solid the walls must be protected with straw whenever there is a continuance of frost above 8° or 10° below freezing-point. Such a pit would cost much less, but must be more carefully attended to in giving air and securing from frost, and extra care to avoid damping. To help in the latter case, the plants could be moved in fine days in winter, the damp bottom scraped off, and 2 inches or 3 inches laid on of dry ashes and lime, which would also sweeten the atmosphere of the pit. Under such an arrangement the plants, except Calceolarias, should be kept dry rather than otherwise all the winter, and when a plant, or a pot of cuttings, shows any signs of distress from drought, the plant or pot should be lifted out and watered, and only replaced after all extra moisture has drained away.

The great object to attempt with such a pit is to keep the plants, and to grow them as little as possible during the winter. For this purpose it would be desirable to have the plants, cuttings, &c., well established in their pots, and well hardened off before being placed in the pit, then to have as much air as possible when the outside thermometer ranged from 38° to 40°, but not a drop of rain on any account; a little air at back at all times during the day if the outside thermometer was above 35°; more in fine days, and especially when mild and sunny; but in hot sun and frosty air to give merely a little at the top, and we prefer a little shading if necessary, to a great amount of frosty air, which dries and burns up such plants unmercifully.

Some covering must be requisite to keep frost out. Nothing is better than calico next the glass to keep all clean, then mats, or hay or straw above, and then a waterproof covering sufficiently wide to go beyond the width of the frame on all sides. If the air is dry enough within, and the temperature only a few degrees above freezing, the plants may be shut up for a month in bad weather and be none the worse for it. They will suffer as little as grass suddenly covered with a foot or 18 inches of snow, which keeps it from the light for a month. The tarring of the walls and also making the ground waterproof in front of such a pit, so that the rains shall not soak back inside, will render the management more easy. In continued frosts, above 10° especially, the walls should be protected with straw fastened against them. With all this care any bedding plants that are generally used may be kept in such a pit.

In severe winters, the continued care and the difficulty and expense in procuring covering, and the time required in turning it over in frosty weather, so as to break the line of conduction of the heat escaping, or the frost entering, which is much the same thing. The time taken up in doing so, and the chance, even with the greatest care, of smashing some glass now and then, added to the discomfort of not being able to see the plants at all times, and the diminution of pleasure from not being able in all weathers to attend to their wants, have led to a strong desire to have some cheap structure, where such objections would not be found, and where a little fire heat could be chiefly given. Now, the cheapest of all modes of heating a small house—say, 9 feet by 20 feet or 30 feet, would be an Arnott's brick stove inside the house, or a portable iron stove, which, however, we do not like so well, and a small portable boiler might also be used; but in the case of those great numbers who would rather have the fire outside than inside the house, I would recommend such a house as shown in *fig.* 3.


N.º 3.

Width 9 feet, height to apex 7 feet, height of side walls 3 feet, openings in these side walls for air 1 foot by 18 inches every 4 feet, ledge left out in side walls to receive the ends of flooring for pots, the other side being supported by posts the pathway, and a plank some 4 inches square with a tch in it to receive the other ends of the boards or spars pit platform. Underneath this platform there will be room stowing Dahlias, Salvias, Fuchsias, old roots of Scarlet raniums, &c. Roof all fixed, rafter sash-bars 3 inches by inch, placed so as to receive squares 18 inches wide by inches deep, and two squares at top every third row made in rame, and made to slide or open on pivots. A cross-bar every eet across from rafter to rafter, and a shelf in the middle over pathway, if deemed advisable, for small plants. The space ieath the platform, and also the sides of the pathway would d many things when first potted before they began to grow, l were thus able to stand the sun on the platform without any ding.

We have represented this house as being heated by a flue ık in the middle of the house, but free of the earth all ınd. If the floor were tiled, the same tiles could go over the of the flue, leaving the open spaces at the sides so as to ure more heat, or if the floor were earth or gravel, the top of flue could form the path, or a sparred gangway could go r it. Either of the two first would be the cheapest. A flue the same principle is shown in *fig.* 4; but to save expense bottom is placed on the ground, and slates or tiles placed gonally at the sides to prevent the soil coming against it, and ıs let the heat ascend from sides as well as tops. This flue y receive a wide-enough cover to form the walk, or may be 'ered over like the rest of the floor, if tiled.

Supposing the doorway was at one end, or you had a doorway each end, so that you could go right through the house, then the kehole should be sunk a little at the side of the doorway, the turned a little until it got to the centre beneath the pathway, l then turn a little at the other ends so as to avoid the door- y, if there is one, and go into a small chimney there. Such ue in a length of 30 feet might rise from end to end some ıches or 3 inches, and to draw well the bottom of the flue ;ht to be from 15 inches to 18 inches above the fire-bars, so t for such a small fireplace as would suit this flue, you would 'e to sink a stokehole from 3 feet to 3 feet 6 inches below ground level, and the small hole could be covered with a t wooden flap.

But, now, supposing that your soil is so bothered with springs l swamps that you could not expect such a hole to be made hout retaining in winter 6 inches or 12 inches of water, then you have to do is to sink all that less, and take your flue ng above the ground level, beneath the flower platform, tead of in the middle of the house. This house we would ise for a warm sheltered spot, and we think that in a short e it will prove cheaper than a pit, as though much more glass l be wanted, the fixed roof will otherwise cost much less than sliding sashes.

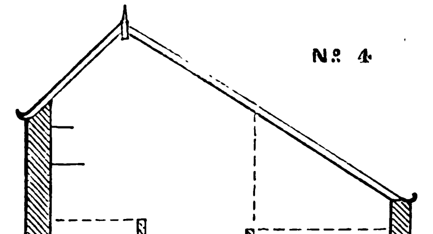


Fig. 4 is a form of house that we would recommend for an osed place, and where even a little fuel would be a considera- ı; width the same, back wall 5½ feet, front wall 2½ feet to et, sash-bars the same; but if the house were 30 feet long would have two slight pillars in the middle, 10 feet apart, l an iron bar along the roof. The short-hipped roof at back ;ht be glass, one-third of it moveable; or, if warmth were a at object, it could be wood, and be painted a light colour de, and a ventilator placed in it all the length. The front tilator we would secure by openings in the front wall, and es. If the house were to be filled with small plants, brackets for shelves could be left in the back walls. The same principle would apply to the flues; and if a little more expense were no object, hot water might be substituted. Such a house with a fixed roof would cost little more than a pit with moveable sashes, and there could be no comparison of the pleasure it would afford, and that, too, ultimately in the most economical manner.

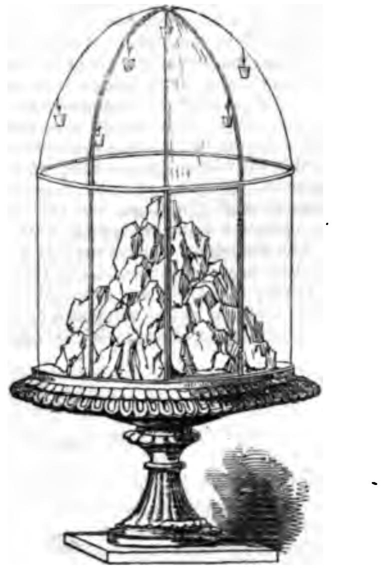
Now for the management of such a house. In summer, unless in boisterous weather, all the ventilators and doors may remain open for months; in winter the tenderest plants could be placed nearest the furnace. If the house were from 30 feet to 40 feet long, it would be better to make two divisions, and place Calceolarias at the farthest end, then Petunias, then Verbenas, and so on, keeping fine Pelargoniums, &c., at the warmest end. The admission of air will always regulate the temperature. Firing should not be given in frost to raise the temperature more than to 38° to 45°; never above the latter. We have made no allowance for moist heat, because from the soil in the pots, and from the floor, sufficient moisture will, in general, be obtained; but if in continued frosty weather the air should become too dry, that is easily remedied by syringing the platform, or damping the floor and walls. The same care must be attended to in giving air as in a pit; but here comes in the advantage of a place to which heat can be applied: you can give just a little air at the top every day, just to sweeten the air in the house; and in cold muggy weather you can put on a little fire, which will enable you to give such an amount of air as will make a little breeze in the house, and even cause the cold fogs to disperse, by changing visible clouds into invisible vapour.

Like everything else, the heating must not be abused; and too much heat is almost as great an evil as too much cold, but a little attention will soon enable a careful man to regulate all that, and also permit him to go to bed at night without being troubled with nightmare visions about Mr. Frost riding away with his most favoured plants.

In one word then, I do not despise pits sunk in the ground or built on the surface—I could use many more than I have, and be on the look-out for more then; but in no case are they so valuable as small houses, which may be considered pits with some simple mode of heating them. After coming a couple of yards from the surface, nine-inch drain-tiles make a good flue; and the mode of fixing and managing them has frequently been described: of course, they must neither be walked on nor kicked against.—R. Fish.]

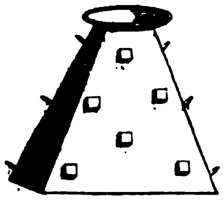
FERNS IN GLASS CASES.

It is very gratifying to observe the study of our beautiful native Ferns becoming so popular, particularly amongst lady



amateurs. No study can possibly be more interesting, I may say fascinating, when entered into *con amore*. Now, as I do not doubt but that there are many who are partial to the pursuit who have no garden in which to plant them, yet would like to have a few, at least, of their favourites growing under their immediate inspection, I will endeavour to describe a method of preparing a glass case, by which they may succeed in growing several varieties in a very interesting manner.

I should prefer a stand similar to that represented in the engraving; it should have a diameter of 3 feet, but less would of course suffice, in cases where that may be thought too large. The glass case should be made to fit exactly to the inside of the stand, and should have the framework formed of stout brass bars, well secured to a strong rim of zinc round the bottom. A department on each side should be made to open, care being taken that these openings are made as nearly air-tight as may be, and a few hooks should be securely fastened to the bars in the upper part of the dome, by which to suspend small plants in pots. The stand should be filled nearly to a level with the rim with broken potsherds or sandstone, or any rubbly porous material. Over this should be laid a small stratum of sand, to make a very level surface. In the centre, on this level surface, place a four-sided cone of zinc, about 16 inches in height, with a saucer at the top, and having some strong pieces, of about 2 inches square, well fastened to and projecting from the sides. Next commence around the base of the cone, and place angular pieces of sandstone of about five or six pounds weight each, and pile up thus completely over the cone. The projecting pieces will assist in retaining the stones in position; and a most important point to be observed is, that every stone must be laid perfectly firm from bottom to top, as the plants will not flourish on a moveable stone. This may be insured by the use of a little cement, as the operation proceeds; but I have also made use of small, flexible wire, passed several times round the mass, for the same purpose. The interstices between the stones may be filled with some nice fibry loam, sandy, soft, and unctuous to the touch. The Ferns are to be planted in these interstices, taking care to make them firm in position.



With regard to sorts, although the smaller-growing varieties are undoubtedly the best adapted for such a case or vase, yet I have used seedling plants of the larger kinds, and these can be removed when they get too large. A case of the size proposed would hold a plant of nearly every British species; but if this were attempted, it would, of course, more frequently require rearranging. The spaces between the Ferns may be appropriately filled up with various Mosses, Marchantias, Jungermannias, Lycopodiums, &c., so that the whole of the miniature rock may be covered with vegetation, and present a green surface. A large plant of Lycopodium umbrosum, on the summit of the pile, would look beautiful; and small pots of the trailing Lycopodiums may be suspended from the hooks in the upper part of the dome. Previous to the stones being placed, they ought to be soaked for a few hours in water. The saucer at the top of the cone should also be filled with water, and the roots of each plant dipped in water as the planting proceeds. When all is completed, sprinkle the whole with water through a fine watering-pot rose, but avoid deluging it; this watering may be repeated from time to time through the doors, but the case being almost air-tight, and evaporation being prevented, water will not often be necessary. The sandstone I have mentioned is a soft ferruginous stone, found in many parts of Kent, and so congenial to the growth of Ferns, that their seeds or spores falling on the shady, moist sides of the rocks composed of it, germinate by thousands.—JOHN COX, *Gardener to W. Wells, Esq., Redleaf.*

[Those who may be interested in growing the most elegant and choice of the British Ferns in glazed cases, such as Mr. Cox has described, will find the following selected sorts well suited for the purpose. Most of the sorts mentioned are to be obtained without much difficulty:—

Polypodium dryopteris.—Bright green, delicate, and pretty; fronds nearly triangular in outline, annual; height 4 inches to 6 inches; caudex creeping.

Polypodium vulgare cambricum.—Evergreen; fronds broadly lance-shaped, with a kind of fringed margin; height 6 inches to 10 inches; caudex creeping.

Allosorus crispus.—Very elegant, parsley-like; fronds almost triangular in outline, annual; height 4 inches to 6 inches; caudex tufted.

Lastræa oreopteris.—A sweet-scented Fern; fronds lance-shaped in outline, annual; height 1½ foot to 2 feet or 3 feet; caudex tufted.

Lastræa filix-mas.—One of the commonest, but a very elegant Fern; fronds lance-shaped in outline, annual; height 2 feet to 3 feet; caudex tufted.

Lastræa rigida.—Very elegant; fronds lance-shaped in outline, annual; height 1 foot to 2 feet; caudex tufted.

Lastræa Fœnisecii.—Very elegant and compound; fronds nearly triangular in outline, annual; height 1 foot to 2 feet; caudex tufted.

Polystichum lonchitis.—Very rigid and holly-like, evergreen; fronds narrowly lance-shaped in outline; height 6 inches to 1 foot; caudex tufted.

Polystichum angulare.—Very elegant and graceful, sub-evergreen; fronds broadly lance-shaped, drooping; height 2 feet to 3 feet; caudex tufted.

Cystopteris fragilis.—Very delicate and pretty; fronds lance-shaped in outline, annual; height 6 inches to 10 inches; caudex tufted. There are several varieties, all of which are very interesting.

Athyrium filix-femina.—The Lady Fern; one of the most elegant; fronds lance-shaped in outline, drooping, annual; height 1 foot to 3 feet; caudex tufted. There are several varieties, of which one is like a dwarf-curled parsley, but the most elegant has tasselled pinnæ.

Asplenium adiantum-nigrum.—Evergreen and glossy; fronds elongate, triangular in outline; height 6 inches to 1 foot; caudex tufted.

Asplenium marinum.—Evergreen and glossy, dense in its habit; fronds lance-shaped in outline; height 6 inches to 10 inches; caudex tufted.

Asplenium trichomanes.—Evergreen, with black wiry stalks; fronds very narrow; height about 6 inches; caudex tufted.

Ceterach officinarum.—Evergreen; fronds lance-shaped in outline, green above, scurfy beneath; height about 4 inches; caudex tufted.

Scolopendrium vulgare crispum.—Evergreen and very distinct in appearance; fronds narrow lance-shaped, undivided, the margin crisped; height 8 inches to 1 foot; caudex tufted.

Adiantum capillus-Veneris.—Evergreen, and very elegant and distinct; fronds irregular, but somewhat ovate in outline, the little wedge-shaped leaflets attached by fine wiry stalks; height about 6 inches; caudex tufted.

Blechnum spicant.—A very elegant and distinct Fern; fronds narrowly lance-shaped in outline, annual; height 1 foot or more; caudex tufted.

Trichomanes radicans.—Delicately transparent, and very beautiful when seen in a vigorous state; fronds either triangular-ovate or lance-shaped, drooping; height 6 inches; caudex creeping.

Hymenophyllum tunbridgense, and H. Wilsoni (unilaterale).—Moss-like, forming dense matted masses, deep dull green, and uninteresting at first sight, but very beautiful on minute examination.

Osmunda regalis.—Almost too large for a case, for which, however, small plants may be used; fronds lance-shaped in outline, annual, differing from all the preceding in bearing their inflorescence in collected masses, occupying the whole apex of the fronds; height 2 feet to 6 feet, or more; caudex tufted.—M.]
—(*Gardeners' Magazine of Botany.*)

LILIPUTIAN DAHLIAS.

I HAVE grown liliputian Dahlias during the last two years The flowers are all you describe, but the plants grow nearly as high as the large Dahlia. I put them as a border to White Zelinda in the centre, which they quite overtopped, and as the bed was intended to match a bed of Asters, it was a disappointment. Can I do anything next year to make them grow more dwarf?—HANLEY.

[We sent your note to Messrs. Henderson, of the Wellington Road Nursery, and this is their reply:—

"The Liliputian Dahlias are only so called by the original raiser from the relative size of the flowers, and not from their diminutive growth. As yet there are not varieties to constitute a section of the Tom Thumb stature (we wish there were, we fancy they are already spoken for). Up to the present time there is only about one in a score of the new liliputians that is dwarf enough to be classed with the usual bedding varieties: consequently you can only make up your outer row with the lowest of the well-known bedding kinds, such as Prince Arthur, brilliant crimson; Beauty de Massiffs, scarlet; and Zelinda, purple, &c."]

WORK FOR THE WEEK.

KITCHEN GARDEN.

Clear off all decaying litter, and stir the surface of the soil on dry days among growing crops, as Cabbage, Spinach, &c.; also get vacant ground manured and ridged up as quickly as possible that it may be exposed to the influence of the winter. *Asparagus*, where this delicious vegetable is required through the winter, a bed should now be made for forcing it; half-spent dung mixed with a small portion of fresh, and some beech and oak leaves are better for this purpose than all new, as it maintains a steady heat for a greater length of time. Make the bed 4 feet high, and place on the frame immediately; when the heat is up, and becomes regular, level the bed, and lay on it a coating of leaf mould or any light soil 3 inches or 4 inches thick, then place the roots as thickly as possible over the bed, and cover with 3 inches of the same soil, afterwards give a good watering, and close the frame until the heat rises, when air must be given according to the state of the bed and the weather; 55° to 60° will be quite sufficient at any time. *Celery*, it is necessary to take advantage of every favourable opportunity to earth up all that requires it; rather let it remain as it is than attempt to do so while wet, as it will afterwards rot in a very short time. *Cauliflowers*, those under hand-lights and in frames to have the surface soil occasionally stirred about them, and abundance of air to be given at all opportunities. *Herb-beds*, if they are not yet cleaned and done up for the winter they should be attended to without delay; a slight coat of very rotten dung should be laid on them for the double purpose of protecting the roots from severe frost and to enrich the soil. *Lettuce*, the Cabbage varieties planted in frames, intended for winter use, will not require much air if the soil is light and dry; should they require a little water give it to each plant from a watering-pot without a rose. Never expose the plants to heavy rains. *Sea-kale*, a little leaf mould, tan, or cinder ashes to be laid over the crowns of the plants; pots may then be set over a portion of the plantation, and be covered with leaves as they are collected; if required for use in a short time stable-dung should be used. *Spinach*, when gathering the leaves the beds should be trodden upon as little as possible, as their growth is retarded by having the soil consolidated about the roots.

FLOWER GARDEN.

If the beds are now filled with the spring-flowering plants lately recommended, a regular clearing up of grass and gravel walks should take place, in order that the whole may have a neat appearance through the winter. If the walks are much out of order a surfacing of fresh gravel should be spread over the principal ones within sight of the windows, to give a degree of freshness to the scene. Complete all planting as soon as possible, and further by all available means the progress of alterations, particularly the removal of objectionable trees, which, if cut down now, may be got out in frosty mornings without much damage to the turf and walks. Take up and store Marvel of Peru, Dahlias, Salvia splendens, if not already done, and finish planting bulbs and Anemones. Gladioli to be taken up when the foliage has begun to decay, and planted in the spring. Most of the sorts like sandy peat, but they will succeed very well in any light garden soil. Now is a fine time for taking up and laying down Box edgings, and also for laying down turf; if the ground is newly made, see that it is rendered perfectly solid before laying down the turf, so that there may be no giving way afterwards. When laid down to be well beaten all over with the turf-beater to close all the edges of the turf, and to level down all irregularities.

FRUIT GARDEN.

The planting of young fruit trees and transplanting or raising those of larger growth to be vigorously prosecuted; the season is very favourable, and the earlier these operations are performed the greater will be the chance of success. Figs should be protected; a good plan is to loosen them entirely from the wall, to tie the branches close together, and when severe weather sets in to wind thick haybands around them from bottom to top.

GREENHOUSE AND CONSERVATORY.

Creepers to be closely tied that they may interfere as little as possible with the admission of light to the interior. Let pot specimens in bloom be frequently re-arranged so as to make the most of these; for the finest specimens become too familiar to be interesting when allowed to remain too long in one place. Double Roman Narcissi, Crocuses, Neapolitan Violets, Mignonette, and Cyclamens bloom early without much forcing, and answer well when placed on shelves at the back of the greenhouse to catch every ray of light, and to insure them from damp. As this is rather a leisure time in this department, the naming of plants should command attention. It is an additional feature of interest to see a collection of plants properly labelled with the names well written and properly spelt.

FORCING-PIT.

The stock of plants to bloom at Christmas, consisting partly of stove plants grown for the purpose and partly of forced shrubs and bulbs, should now receive some attention, particularly the latter, which should be undergoing a slight amount of forcing to get them into bloom by that time.

PITS AND FRAMES.

In fine weather, when the lights are off, look carefully over all the free-growing plants, and pinch out the tops of the shoots to keep them dwarf and bushy; also remove dead leaves. Give air freely night and day while the weather is mild, keeping the plants moderately dry. Carnations and Picotees in frames will require some attention, giving them a free circulation of air during the winter months, and water as they need it. Auriculas and Polyanthuses will require but little water; air and exposure are indispensable to these hardy alpine plants. Any premature blooms that appear to be removed. The cuttings put in late to be sorted, and all that are rooted to be removed to another pit or frame where they may be gradually exposed to more air, and the others not thoroughly rooted to be replunged and kept close until they become rooted.

W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Plenty of rains at last to raise the springs and fill the tanks to the relief of everybody in this quarter, as cottagers were using water fit to bring on goitres and diseases of all kinds, and some farmers had to borrow and beg loads from their more fortunate neighbours. We managed to get most things secured out of doors, as the suddenness of the frost, and the suddenness of its going, and the great fall in the barometer, led us to expect heavy rains. In addition to what was stated last week, as to housing, &c., we raised all our early *Cabbages*, those intended for the first crop in spring, but which have got too vigorous to please us, just inserting a five-tined steel fork under them deep enough, and raising it high enough to enable us to feel the tug of the roots snapping, and then treading the earth about them again, and earthing well up against the stems. We had this done in time before the lashing rains of the 12th and 13th. During the sun of the 11th they flagged considerably, but that was what we expected and wanted. The check to growth by making the plants less stored with sap, will give them the chance of passing a sharp winter uninjured. Pricked out also lots of young Lettuces and Cauliflowers where protection of any old glass could be given to them, and whilst wet was excluded, gave plenty of air to all such things night and day. Spawned a fresh Mushroom-bed, and as the material was damper than we like it, wrapped each piece of spawn in a handful of dry short litter before inserting it.

UNDER GLASS.

Had all Strawberries and fruit trees in pots secured from wet, and in most cases covered the pots with litter or leaves to keep out severe frost, and as the weather was unfit for doing much out of doors, finished storing past Geraniums, taking up Scarlets, &c., that had been struck thickly in cold beds under spare sashes, and packed them thickly in shallow boxes, so as to be moved anywhere. Pruned and cleaned Peach-house, and filled it just now to overflowing with plants, as we shall not force early. Made these boxes, washed pots, using heated water and a comfortable shed. Washed plants that had any sign of filth on them. Potted Cinerarias for succession, and put them on boards in a cold earth-pit protected with sashes. Made tallies, cut stakes, cut shreds, and got all house work forward, that on the first dry fine day all the strength may be devoted to cleaning the lawns, beds, and walks. A good sharp frost, by bringing down all the deciduous leaves, would lessen our labour in this direction. Seakale and Rhubarb have been placed in Mushroom-house.—R. F.

TRADE LISTS RECEIVED.

A Select Catalogue of Orchids, Stove, Greenhouse, and other Plants, Trees, Shrubs, &c., by B. S. Williams, Holloway.—This catalogue is particularly rich in Orchids, Exotic and British Ferns, and Stove and Greenhouse Plants. It is not often now-a-days that we find so good a list of Herbaceous and Alpine Plants as Mr. Williams here enumerates, to all of which prices are affixed. It is a good and useful catalogue.

Nursery List of William Pontey, Huddersfield, 1861-2, contains the usual stock of a country nursery.

Descriptive List of Gladiolus, Pansies, and Hollyhocks, by Stuart & Mein, Kelso.—To those who are interested in florists' flowers, and particularly Hollyhocks, Pansies, and Gladiolus, this list will be acceptable, as it contains all the best of the novelties.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Auriculas (*H. M.*).—Write to the nurseryman you name, and he will send you a priced catalogue. We cannot undertake to negotiate with amateurs.

Hyacinths for Exhibition in April—Cucumbers (*A. B.*).—Your best plan with the Hyacinths will be to pot them at once; but to keep them covered up in a cool place out of doors until towards the end of March. We do not think anything is gained by keeping the bulbs unpotted, unless you could keep the roots from growing by having them in an ice-house, suspended in a basket from the roof; and thus kept you might defer potting to the end of February. Cuthill's Black Spine is a very good variety of Cucumber; so is Lynch's Conqueror of the West. For white-spined, Manchester Prize and Telegraph are good long sorts; but in exhibitions good judges will pass by mere size for symmetry and freshness.

Buyers of Cut Flowers (*E. B.*).—The cut-flower salesmen in Covent Garden Market were alluded to by us, and their names are various. All we recollect of them now, are Mrs. Johnson and Mr. Buck.

Root-pruning (*A Constant Reader*).—We know of no separate work upon this subject. Certainly the first President of the Royal Horticultural Society never published one.

Various (*Deodar*).—The paper you enclosed will do very well for drying specimens of Ferns. Any thick blotting-paper—that is, unsized paper, will answer. The *best* book on Ferns (Foreign and British) is Hooker's "Icones Filicum." The "Florist," commencing next year, will contain illustrations of florists' flowers, popular hardy and greenhouse plants, Ferns and fruits, but not of stove plants.

Dioscorea Batatas (*Solanum*).—You may either take up the tubers and bury them in coal ashes, or you may leave them in the ground until required. They are quite hardy. Our correspondent would be glad to know of any mode of cooking them besides boiling.

Garden Plan (*Ninetta*).—Your gardens are very well planted indeed, and your plans are so novel that we shall, before long, engrave and publish them. In plan No. 2, it will be seen the large beds are linked together in the chain manner, as other kinds of beds are in the chain patterns at the Crystal Palace, and a very effective plan it is. All the links are planted with the Variegated Balm; but Cerastium tomentosum would do as well. The large circle in the angle formed by the position of the two gardens comes in exceedingly well as an episode between the two systems of beds, and these two being not seen at one view, owing to the shrubs, is a great addition to the interest of the place.

Streptocarpus biflora (*C. P. M.*).—Streptocarpus biflora, or polyantha, is a soft-wooded stove plant that blooms freely enough during the summer. If the heat for it during the winter has not been under 55°, and 60° would not be too much for it during the rest period; but if it could have a corner of a Cucumber-frame from the end of February to the latter part of May and a dry house in winter, from 50° to 55° ought to keep it safe.

Geraniums Wintering in Cellar (J. [illegible]

[illegible]

Cyanophyllum magnificum, and Stephanotis floribunda (*Bob*).—The Cyanophyllum looks best when not too large, and with large leaves over the pot. To secure this you must nip out the terminal bud, or even prune the shoot well back. Fresh shoots will then break out, and give fresh, fine foliage. The Stephanotis will not stand if long below 50°. If never below 45° for any length of time, and generally nearer 50°, it will do.

Heating a Very Small Propagating-house (*A New Subscriber*).—A small iron stove and chimney-pipe in the centre of the house as you propose is most advisable for so small a structure. The Scarlet Runner seed which you sowed had been crossed with pollen from the Dutch case knife. The mere colour of the seed varying is no merit. The only characteristics rendering a variety worthy of propagation are superiority of produce either in quantity or quality, or in both.

Patent In-door Plant Cases (*A. B.*).—They are as effective as any other heated plant case for striking cuttings. You will see more about them several weeks. Write to the makers for information about price. You may buy choice Mimulus seed of any of the large seedsmen who advertise in our columns.

Gas Stove in a Greenhouse (*H. Lawson*).—With an efficient chimney-pipe to carry off the fumes arising from the burning gas, it is a very cleanly, easily managed, safe, and efficient mode of warming a greenhouse. We had one in use for several years.

Book on Flower Gardens (*R. K.*).—Messrs. Major's book on this subject is priced half-a-guinea.

Names of Fruits (*G. W.*).—Never pack fruit in moss; it completely destroys the flavour. No. 1, unknown, and a worse than worthless variety—it does not deserve a name; 2, Catillac; 3, a beautiful specimen of Cockle Pippin; 4, Nelson Codlin. (*Cold Harbour*).—No. 1, Dumelow's Seedling; No. 2, Yorkshire Greening.

Ink for Zinc Labels (*Junior*).—Scrub the labels bright with sand-paper, and write on them immediately, using a quill pen, with the following mixture:—one drachm powdered verdigris (acetate of copper); one drachm of powdered sal ammoniac (muriate of ammonia); half a drachm of lamp black; ten drachms of water. Mix these in a two-ounce phial, and shake every time you use it. It is ready for use as soon as the verdigris and sal ammoniac are dissolved.

Names of Plants (*F.*).—1, Nephrodium molle; 2, Woodwardia (alias Doodia) caudata. (*Farmly*).—It is impossible to determine sprigs of Cupressus, Juniperus, and similar Conifers. The fruit is that of some Euonymus; but we cannot name from the fruit alone. (*P. M. K.*).—The fruit is a Physalis, and probably P. edulis, the Cape Gooseberry, which, as its name implies, is edible; but you have not sent leaves and flowers in a state for exact determination. It may be cultivated very much in the same way as the Tomato. (*J. N. Gibbs*).—Portulaca Thellusoni. (*W. Gates*).—It is Selaginella cuspidata. (*A Dorsetshire Subscriber*).—Both specimens sterile, and therefore not readily determinable. No. 1, appears to be Cystopteris fragilis, *var.* dentata; 2, Lastræa dilatata.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

WHO MAY WIN AT THE BIRMINGHAM AND CRYSTAL PALACE SHOWS.

(*Continued from page* 137.)

We recently had a book put into our hands professing to teach the art of insuring longevity, guaranteeing, if its rules were followed, a green old age at fourscore. The author died at thirty. The writer of a treatise which placed a fortune within every man's reach, and which rendered poverty an impossibility, died in Worcester workhouse; and the inventor of the "antifallipilos," which prevented the hair from falling or becoming grey, was obliged to take a wig at twenty-nine, not having a hair upon his head. We who have kept poultry without taking a prize all our lives, will continue our last week's paper on the things that must be followed and avoided to insure success.

We left off at **Pencilled Hamburghs**, we now take their **Spangled** brethren. The Silvers must have spotted breasts, they must also have clear tails—that is, white tails with a distinct spot or moon at the tip of each feather; the hackles of the hens must be clouded, the wings barred, and if laced, so much the better. The combs must be firm on the head, quite straight, full of points, well piked behind, the pike inclining upwards. The body must be spangled all over. The same points apply to the cocks in almost every particular, but the barring and lacing of the wings are more desirable in them than in the hens.

In addition to these points, the Golden must have a buff tinge at the root of the feathers. The clear tails are not required here as in the Silver.

Loose combs are to be avoided, and indistinct markings. Each feather should have its clear spot, spangle, or moon, and all must have blue legs. Large unwieldy combs are to be avoided in the cocks. We mean those that hang over the nostrils and partly conceal the eyes.

Brahma Pootras may be either pencilled or light. The hens of the former should be grey all over; the latter should be white except stripes on the hackle, the flights, and the tail. The light cock should be coloured like the hens. The dark [illegible] black or nearly black breast, light hackle and [illegible] dark thighs. All must have feathered legs. They may be either pea or single-combed. They must be large.

Sebright Bantams cannot be too small, but although desirable, diminutive size cannot counterbalance defects. Choose, therefore, your birds as free as possible from hackle and saddle, with clear tails, and accurately laced feathers, strutting carriage and drooping wings, firm, full-pointed, and piked combs, straight on the head, and the pike inclining upwards. Having secured these essentials, then look for small size, which is a great element in success.

Game Bantams are in many respects opposite to the Sebrights. The wings of the Game instead of drooping, must be carried well up to the body like the Game fowl. The tail must be flowing instead of round like a hen's, not carried squirrel-like over the back. The head must be fine and well set on, and the carriage bold, but not strutting and shaking. The combs of the hens should be straight.

Black and White Bantams should be small, close-feathered, and very smart. In both the cocks should have long and full tails. The Black should have white ear-lobes. Rose combs are preferred, but single ones are not disqualifications.

Geese must be heavy. **Aylesbury Ducks** must be heavy, and their bills must be pale. **Rouen Ducks** must, both duck and drake, resemble Wild Ducks absolutely in colour of plumage and bills. The larger they are the better; but no weight can compensate for faulty plumage, or green or leaden-coloured bills in the ducks. The **Black** or **Buenos Ayrean Ducks** should be as small as possible, close round bodies like a Wild Duck, with perfectly black plumage, brilliant with green metallic lustre. **Call Ducks** should be very small, with round heads and short bills.

We will conclude with a few general rules for young exhibitors—indeed, this and the preceding paper are intended only for them. We have no pretensions to teach many of our old prizetakers.

Fowls to be successful must be sent in high condition; but even in those classes where weight is an essential, mere fat will not do—large framework is necessary. Judges are not guided by mere weight, but the size of the fowl is ascertained and tested by measurement. Excessive fat, so far from being desirable, is a great disadvantage. Fowls suffering from it are necessarily dull and sleepy, they get into the corner of a cage, whence they will hardly allow themselves to be moved, and are spiritless and unattractive. The greatest amount of weight must be attained that is consistent with exercise and hard condition. Beauty of plumage is a great help to success, and this cannot exist with much fat, as its tendency is to loosen the feathers and make them hollow. Fowls should be sent to a show with clean plumage, and those that should be white, and are not white, should be washed to make them so. Soap and water may be easily and safely used with a flannel; and if the birds are afterwards put in a basket with some soft straw, and placed before a good fire, they soon become dry. All fowls should also be sent to a show with clean legs. Even where the birds shown do not belong to a breed of which feather is the principal merit, it is desirable to choose those that match as nearly as possible; and in every breed it must be recollected that positive similarity of comb and colour of legs are imperatively necessary to constitute a competing pen in *any class*. We have used the word "must" rather freely in some instances; we think we might substitute the word "ought." It is easier to describe perfection than to produce it, and lest any should be discouraged we tell them that even among the prize birds of Bingley Hall there are very few *perfect* pens.

We advise sending fowls away early to a show. They get more care in unpacking, and they look better before the Judges, from having had more time to recover the effects of packing and the journey. It is, besides, due to the members of any Committee who undertake the task of unpacking. There is no reason why they should be kept at their unpleasant work all night. It is also far better where they have a long distance before them, that fowls should travel at night. Those who manage to a nicety are sometimes too late, and at others they arrive after the Judges have commenced their work. One is almost as bad as the other. With regard to the food they should have before they start, it should be of a light character. They have no opportunity in their baskets of finding stones to assist digestion, and for that reason we object to whole corn. We believe sopped bread to be the best thing they can have, and in very severe weather it is a wise precaution to give them a part of their meal steeped in strong beer.

All baskets should be round to prevent any feathers from being broken. There is no angle in such a one for a bird to get into to escape from beating, or to crouch to roost. If it is in motion, the tail follows round, and the feathers are not injured. The basket should be covered with double canvass. It should be large enough to allow all the birds to sit down, and high enough to allow the cock to stand upright without injury to comb or top-knot.

"WHO BOUGHT MY PEN OF FOWLS?"

Allow me to thank you for your reply to my inquiry as to the power of insisting upon being furnished with the name of the purchaser of my pen of poultry at the late Crystal Palace Exhibition, by Mr. Houghton, the Secretary; and as you have expressed so strong an opinion against the propriety of my doing so, I shall not further move in this matter, though I am still of opinion that in every case where it is required, the Secretary should be authorised to give the information to the seller of the poultry, and that altogether for the benefit of the breeder, and not from any ridiculous curiosity or vanity.

May I further trouble you to allow me space in your next Number to reply to an observation or two of your correspondent "A Young Cochin Cock," with whom I should be glad to be acquainted, that I might by a friendly note explain the circumstance alluded to by him, instead of troubling you and your readers with our little differences? It is true I entered a pen of birds at Worcester, one of which I bought at the Crystal Palace. In my case, however, I made no secret of it, but openly mentioned the fact to all I had the pleasure of speaking to on the subject; and at that Show it was not necessary to give the name of the breeder; and, therefore, none was given. It will give me much pleasure to meet the present owner of the poultry bred by me at Birmingham, and trust when I do so it may be to congratulate him on the further success he anticipates, assuring him that though I shall do my utmost to beat him, my next greatest satisfaction, should I fail, will be to find that I have contributed to the success of a mutual lover and patron of this beautiful breed of poultry.

I entirely disclaim all intentions of conveying, by my last note, any idea of fraud to the party alluded to; my sole wish was, as therein named, to try to stop the practice of withholding, what I thought, fair information to the breeders of poultry at future shows; and though in this instance I am for the moment apparently outvoted, I feel sure that breeders, as a class, will on reflection agree with me; and ere long for their own satisfaction assist me in placing this amongst the rules of all our leading exhibitions.—Edgar Musgrove.

[We think that such a rule as Mr. Musgrove wishes for never will be added to the rules of any society desiring to be permanent. Some purchasers do not like to have known how much they gave for a pen; and others do not wish to have revealed what strains they introduce to improve their breed of fowls. Any one wishing to avoid any particular strain can easily avoid it by asking a vendor whether his birds on sale are of that strain.—Eds.]

SHEFFIELD AND HALLAMSHIRE PIGEON SHOW.

The third annual Sheffield and Hallamshire Pigeon Show, for birds hatched in 1861, was held at the house of Mr. Mellinsh, Walkley, on Monday, the 3rd inst., when four beautiful silver-plated cups and other prizes were awarded as follows:—

Class 1.—Carriers.—First (the Society's cup, value two guineas), Mr. Colley. Second (a pair of beef-carvers, given by Mr. Milner), Mr. Colley.

Class 2.—First (the Society's cup, value two guineas), Mr. J. Smith. Second (a beautiful case of ladies' scissors, given by Mr. Colley), was awarded to Mr. Tysack. Third (a handsome pair ivory carvers, given by Mr. E. Brown), was won by Mr. H. Brown, Walkley.

Variety Class.—First (a silver cup, given by Mr. Mellinsh), Mr. W. Taylor, with a very fine Red Jacobin. Second (a silver cup, given by Mr. Deakin), Mr. J. Smith, with a splendid White Fantail. Third (a highly-polished backsaw, given by Mr. Tysack), Mr. H. Brown, Walkley, with also a fine White Fantail.

There were also some old birds shown by the members of the Society, among which was noticed a most splendid Carrier cock belonging to Mr. Colley, for which that gentleman has refused £20. Also, some beautiful Powters, shown by Messrs. H. Brown, E. Brown, T. Sorby, W. Taylor, J. Smith, and others.

There was a handsome White Powter cock exhibited by one of the members, which was greatly admired by the visitors, bred by W. Tegetmeier, Esq., London.—E. B.

MR. TATE AGAIN.

In a late Number of your Journal Mr. Tate advertised "a pen of Duckwing Game fowl, winners of nine prizes, and a Black Red cock, second in the Birmingham sweepstakes, for sale or exchange." I made application for them, offering "a pen of Duckwing Bantams, a pen of Black Reds, and two ordinary Spanish pullets;" at the same time telling him, did the birds not answer the description I gave of them, he had merely to return them and it was no bargain. After a delay of some three or four days he writes, requesting me to send my birds and he would return me the Game fowl he had advertised. In the meantime I sold the Duckwing Bantams, but in their place sent him extra Black Reds, stating how and why I had done so, and, if he did not approve, the lot was to be immediately returned. This he did not do, but writes describing the lot of birds sent as "scrubby," not worth £1. Of course I remonstrated, requesting £2, the Game fowl, or my birds to be immediately returned. After continued remonstrance and threats of exposure, the grand finale is that he writes to say he will not return my birds, or will he pay for them, or send me the Game fowl promised in exchange; his apology for such conduct being that I had sold the Duckwing Bantams, and he should stick to his determination until I sent him a pen, as he considers himself an ill-used individual.

I have placed the matter in the hands of my solicitor; and I need not say I will do my best to obtain something like compensation out of Mr. Tate, be he a man of straw or not.

I trust you will give this letter publicity, as a caution to those who answer Mr. Tate's advertisements for the future. This is not the first time I find Mr. Tate has distinguished himself in your Journal.—Vavasour Sandford, *Hon. Sec., Plymouth Poultry Show.*

[Any one will, referring to Nos. 626 and 627 of our first series, will see how Mr. Tate conducted himself in transactions with Mrs. Cross and Mr. Baxter. We hope that Mr. Sandford will not allow trouble or expense to swerve him from the course he has adopted.—Eds.]

THE BIRMINGHAM CATTLE AND POULTRY SHOW.

We have pleasure in announcing that the thirteenth of those annual exhibitions which have rendered Bingley Hall so famous will be in all respects equal to any which have preceded it, and probably, in some departments, of unusual interest. The entries are now closed, and fully warrant these favourable anticipations. The names of many of the first supporters of the Birmingham meeting will be found in the catalogue of this year, with the addition of others who have for the first time become members, and whose co-operation is valuable, especially as showing that the influence of the Society is still extending.

	1858.		1859.		1860.		1861.
Poultry..........	1,337	...	1,342	...	1,134	...	1,396
Pigeons..........	222	...	214	...	168	...	221

The entries of poultry and Pigeons, it will be noticed, exceed those of last year by 315, so that the changes to which we have previously referred have proved satisfactory to exhibitors generally. The Poultry Committee have had all the pens altered to meet these changes, and have been enabled to give some additional space in the walks between each division; the whole of the poultry and Pigeons will also be now for the first time located in the original poultry bay, and with increased facilities for examination. These alterations will leave additional room for the exhibition of articles of an agricultural character, and this year there will be a [illegible] implements shown.—*Midland Counties Herald.*

Smithfield Club Show.—The annual Cattle Show of the Smithfield Club will once again be held in the west end of London. It is now twenty-two years since it was moved from Goswell Street to the Baker Street Bazaar, during which period it has continuously improved. The Show this year [illegible] entries any of the preceding, and the lists comprise the names not only of the well-known exhibitors of the best prize specimens in Devons, Herefords, Shorthorns, South Downs, &c., but also those of His Royal Highness the Prince Consort, His Royal Highness the Prince of Wales, and many noblemen who take a lead in agriculture. The days appointed for the admission of the public are the 10th, 11th, 12th, and 13th December, and it is confidently expected that the Show this year (the last at the Baker Street Bazaar) will fully sustain its national reputation.

OIL PAINT ON FOWLS' FEATHERS.

Having had the misfortune to have some of my fowls covered with oil paint, from their getting too close to some newly-painted palings, I think I should be wrong in not letting you know for the benefit of your readers, who may have the like misfortune happen to them, that "Benzine Collas" (obtainable at chemists) entirely removed it, even after some days, and no damage has been done to the plumage.—H.

KEEPING POULTRY ON A LARGE SCALE.

In answer to "Intending Farmer," we will first observe that the land which will suit best for agricultural purposes will not be that we should select for poultry. Poor, light, sandy soil is that which is required. Chickens thrive better on that than on any other. If your intention be to sell eggs only, then we advise you to keep either Cochins or Brahmas. They are the best layers; but there is one thing you must bear in mind—only young fowls lay in the winter. No artificial warmth will make old hens lay in cold weather, nor will any of any age lay during the moulting season. We need not tell you that to make it profitable you must produce eggs when they are scarce. Really new-laid eggs are now making threepence each in London. The cost of fowls kept in laying condition, and taking the average of the year round, is from three halfpence to twopence per week—say 8*s.* 6*d.* per year. This is admitting that everything they require has to be bought; but if you keep them in a farm-yard, where food is to be picked up, the cost will be thereby diminished. Nevertheless, in calculating as you wish to do, it would hardly be safe to reckon on less than this, because filling fowls' bellies with Indian meal, rice, potatoes, and such like, is not feeding for eggs. We are not advocates for forcing by unnatural food, because it is a small temporary gain at a certain loss. You get some eggs out of season, and the hen is spoiled by disease; but we advise to counteract inclement and unfavourable weather by extra food. The warmth that is beneficial to poultry should be the produce of better food than common hot stoves or hot-water pipes.

By proper painstaking, the laying of fowls may be calculated with almost the same certainty as the parturition of animals. Brahma pullets hatched in April, and Cochins in May, are sure, if they are in good condition, to lay in November. These will pay, because a few eggs in that and the two following months will pay twelve months' expense of keep: consequently those they lay afterwards and the chickens they rear will be profit. No fowl lays nine months out of the year. We cannot tell you how many acres would be necessary to enable you to keep 1000 fowls, unless we know whether they are to be the first consideration, or whether they are only to be auxiliaries. If the former, we advise you to take a place near a common, where rent is very cheap, and where you can have an extensive gratuitous run; also where you can have gravel almost for the digging, and where you can cut sods of grass you will require for such birds as are in pens. If the latter, you must greatly diminish your intended number. When you have your place, we advise you to begin with not more than from 50 to 100 pullets of the breeds we have mentioned, and be sure they are May chickens. You will not be particular as to colour or strain, as they are only wanted for layers; and an advertisement will bring them at from three to four shillings each in July. It is not necessary to go to any expense about houses. Any old house will do, provided it has an earthen floor, neither bricks, boards, nor stones. If you are near a station, you need not care for being near London. The difference in rent between near London and some miles lower down will doubly pay railway carriage. You will, of course, understand that, after the first year, you will breed your own fowls, and every year you will clear off your old ones, except a few for mothers. We have ıbt eggs may be made to pay. Vast numbers come from nd, and the trade thence is increasing. As soon as it is ı your eggs can be depended upon, you will have more ready sale—they will be sought for.

believe much of the extract you enclose is correct.* The ıt of eggs and poultry sent to England and set at £240,000 ' much understated, while the expected increase in France £7,315,200 to £34,425,600, or nearly 500 per cent, is ous.

:HIBITION OF CANARIES AND OTHER CAGE BIRDS AT DERBY.

the 2nd inst., the members of the Derby Bird Society held ourth public Exhibition of cage birds in the Athenæum Although the day throughout was very cold and winterly, ow was in every respect a far more successful one than any fore held in Derby. With the kind assistance the Society ceived the members have been able to extend their ope· ı, and look to the future for still greater success. The s breeds of birds exhibited were first-class, some in par- being very choice, and bearing evidence of considerable ıving been bestowed in bringing them out so well. The ʁ birds were good, and much curiosity was caused from eculiar form. The *Norwich* exceeded past shows, and *:zards*, *Cinnamons*, *Mules*, and other kinds were well re- ted. The number of birds shown exceeded last year, and well-bred *Canaries* and *Doves* were exhibited by Mrs. Cox, of Spondon. *Parrots*, *Goldfinches*, *Starlings* (one :h piped "Charley o'er the water" very correctly) were nted by some choice specimens.

Judges were Mr. Mason, Nottingham, and Mr. Matthews, d. The following are the awards:—

BIRDS HATCHED IN 1861.

Yellow Belgian.—First, T. Carrington. Second, S. Bunting . Price.

Buff Belgian.—First, S. Bunting. Second, T. Carrington. Third, esby.

Iarked Belgian.—First, S. Bunting. Second, J. Price.

ıated Yellow Belgian.—First, T. Carrington. Second, R. Smith. . Bunting. Fourth, G. Barnesby.

ıated Buff Belgian.—First, J. Price. Second, J. Brodie. Third, ngton. Fourth, G. Barnesby.

n Fancy.—Prize, G. Barnesby.

Yellow Norwich.—First, H. Beeston. Second, E. Orme. Third, ı. Fourth, J. Pimm. Fifth, G. Barnesby. Sixth, J. Boden.

Buff Norwich.—First, E. Orme. Second, G. Barnesby. Third, ı.

ı-spangled Lizards.—First, G. Barnesby. Second, H. Beeston. . Price.

spangled Lizards.—First, L. Buxton. Second, E. Orme. Third, ıgton. Fourth, J. Price.

' Spot or Cross-bred.—First, J. M'Connell. Second, G. Barnesby.

Spot or Cross-bred.—Prize, J. Brodie.

mon (Mottled).—Prize, G. Barnesby.

rested.—Prize, R. Bond.

Goldfinch Mule.—Prize, G. Barnesby.

Goldfinch Mule.—First, E. Orme. Second, T. Carrington.

BIRDS OF ALL AGES.

Yellow Belgian.—First, E. Orme. Second, S. Bunting. Third, R. Fourth, R. Stanliand. Fifth, J. Crookes. Sixth, J. Price.

Buff Belgian.—First, J. Price. Second and Third, S. Bunting.

ated Yellow Belgian.—First, J. Fisher. Second, R. Smith.

ated Buff Belgian.—First, E. Orme. Second, T. Keys. Third ·th, J. Price.

Yellow Norwich.—First, J. Pimm. Second, E. Orme. Third, G. ·. Fourth, J. Price.

uff Norwich.—First, G. Barnesby. Second, E. Orme.

Marked Norwich.—Prize, J. Crookes.

-spangled Lizards.—Prize, S. Bunting.

spangled Lizards.—Prize, S. Bunting.

Goldfinch Mule.—First and Second, E. Coke. Third, E. Orme. E. Coke. Fifth, S. Keys.

Mule.—Prize, J. Hall.

BARNESBY, 132, *Abbey Street*, *Derby*.

SPARROWS MISTAKING THE SEASON.

INSTRUMENT FOR TEACHING BIRDS.

A QUANTITY of sparrows have been observed busily collecting straws, moss, and feathers and carrying them away, during last month, and even this morning (November 8th). Is it possible that they are building now? If so, it must be a singular proof of the mildness of the season.

Can any reader of the Journal give the writer any information as to self-playing instruments for teaching tunes to birds? She has a serinette, but its tunes are too complicated and not sufficiently flute-like. She heard a report of some German contrivance which was very suitable, but does not know its name, or where it can be met with.—E. A. M.

[If the sparrows are building, it is an illustration of Cowper's verses on a similar transaction, and we have no doubt that there will be a similar climax. Snow came, and then

"Into their nests they paddled,
Themselves were chilled, their eggs were addled:
They parted without the least regret,
Except that they had ever met."]

THE CANARY AND THE BRITISH FINCHES

(*Continued from page* 38.)

THE CAGE.

THERE is an old saying, "Get a cage before you buy a bird." This, like many other pieces of good advice, is often omitted, and the possessor of a bird is at first frequently obliged to beg or borrow some old or dilapidated prison for his newly-acquired favourite until some convenient opportunity offers of procuring a new one. The cage, when bought, is sometimes only a showy gimcrack, made more to catch the eye of the purchaser than for the comfort and well-being of the future occupant, and, I believe, it sometimes happens that, owing to the hole being too small for the bird to put its head through to get its seed or water, that the poor bird dies soon after being placed in its handsome dwelling, and then the bird dealer is blamed for some supposed injury done to the individual, instead of the oversight in having the cage adapted to the bird that is to live in it; for the hole through which a Canary or Goldfinch could reach its food or water with ease, would be too small to admit the head of a Greenfinch or Bullfinch to pass.

Of course, much must be left to the taste or fancy of the individual, and a cage is none the worse for being handsome and elegantly ornamented, provided the convenience and health of the inmate are not overlooked. I will, therefore, offer a few remarks on the common faults to which cages are liable.

The hole or holes through which the bird is expected to put its head to obtain its water or food, must be sufficiently large to permit the head to pass easily, yet not so large as to allow the shoulders to be squeezed through, or on the removal of the glass, or drawer, the bird may make its escape and fly away, or fall a prey to some cat. I have also known a bird to take fright and force its way through the hole into the water-glass and be drowned. The food and water should be so placed that the bird can see it and easily procure it, and yet not throw it over, dirty it, or otherwise waste it. The floor should draw out for the facility of cleaning, and to contain the sand so essential to the well-being of all birds. The perches should be sufficiently large for the bird to sit securely and grasp them firmly with its feet, and they should not cross each other, nor be so placed that when the bird sits on one a lower one can be soiled, as this dirties their feet and often causes very troublesome sores. The upper perch, or perches, should not be near the top of the cage, as that causes the bird to acquire a habit of stooping, which spoils his appearance, and in which constrained position he cannot give full force to his melodious voice. Perhaps, however, there is one exception to this rule. I refer to the Hooped Belgian fancy where stooping is regarded as a beauty. In all other cases it should be avoided as much as possible. Of the wires I would say, they should not be too far apart to admit the escape of the prisoner, and brass or copper wires are to be avoided. The brass are very apt to break, and both if they get dirty produce verdigris, which is poisonous.

If the bird is to be hung out of doors in fine weather, which is generally advisable where safe, it is well to have the roof of the cage covered to keep off the too-direct rays of the sun and protect its contents from a hasty shower. If the cage is hung

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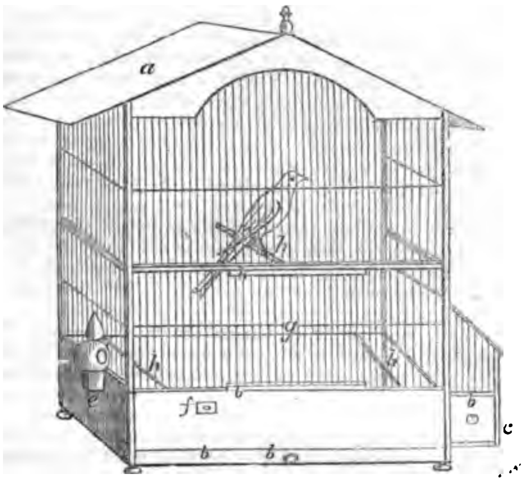
ch POULTRY.—The following are the statistics of French poultry:— ole country rears 30,960,000 hens, yielding 3,715,200,000 eggs, of of 148,608,000 francs (£5,944,320). When to this we add the value s food, the number of cocks, pullets, and capons, we find that the oduce of poultry in France may be valued at 182,880,000 francs 00). But while this may be regarded as the actual produce of the present time, an immense increase is calculated upon. By an system of feeding, and by increasing the amount of laying eggs by artificial heat, the grand total is enlarged from the amount just 885,640,000 francs (£34,425,600). Eggs are consumed in Paris to ıt of 3,784,243 lbs. weight annually; and in many parts of the ıey constitute, along with bacon, the principal food of the inhabi- rance exports to England, in eggs and poultry, to the value of francs annually (£240,000); and also largely to Russia, Spain, and ıd."

where it is likely to be in a draught, one side and the back as well as the top of the cage should be close, to give the bird a secure retreat, for although fresh air is conducive to health, yet many birds contract coughs, asthma, and inflammation, which affect their voice and frequently kill them, from too great or sudden a change in temperature, or being exposed to a direct draught. The door of the cage is often so placed that it is very difficult to catch or remove the bird when desirable, and it should be so made that the bath can easily be attached, as frequent bathing is conducive to the health and enjoyment of all birds.

Having now enumerated a few of the inconveniences attending cages in general, I will endeavour to sketch what I consider a plain and useful sort, one that will conduce to the health and enjoyment of the occupant; and as the well-being of the bird also adds to the pleasure of keeping it, the attainment of the one is the fulfilment of the other. The larger the cage is in accordance with the facility of removal, or the space appropriated to it, the better, as the more room and exercise the bird can take the better will be the condition of the plumage as well as its general health. I, therefore, advise, that a cage intended for a Canary or any of our British Finches should be at least 1 foot high in the clear, 9 inches wide, and 6 inches deep from back to front. The upper perch should be 6 inches from the top of the cage to give the bird room to stand erect and hold up his head boldly when he sings. I prefer the cage somewhat larger than the above, the smaller size being scarcely adapted for larger birds than Siskins, Redpolls, or Aberdevines.



UNIVERSAL CAGE.

A Sloped top to keep off sun or rain.
B Slide bottom for sand.
C Seed drawer.
E Water glass.
F Small pan.
G Door.
H H H Perches.

The form I like best is that shown in the accompanying drawing, which will explain better than I can in words. The bird is there represented sitting on the upper perch, and he is not cramped for room. The perches do not cross. The food-drawer being outside the cage, the seed is kept clean. The slide at the bottom allows the whole of the floor to be sanded. The door in front is convenient for hanging on the bath, and the overhanging slanting roof affords the bird shade or protection from a shower. It can be made cheap in deal, painted outside and whitewashed in, the lattice being of galvanised iron wire, or it might be made in stained oak, or polished mahogany, and ornamented to any degree for taste or elegance.

This form of cage appears to be best adapted to the comfort and convenience of birds in general, and can be enlarged to suit any sort, as, for instance, a Thrush or Magpie. It may have a bow front for a Skylark, or may be made lower and longer with single row of perches for a Titlark or Wagtail. Fanciers of the Hooped or Bowed Belgians might like the roof lower, so as to keep the bird's head down; while the Scotch fancier will have it longer, with two parellel perches that the bird may leap from one to the other, to show off his whisk and wheel so characteristic feature in their breed.

The place where the bird is to be kept is subject to draughts [illegible] so as effectually to protect the occupant, otherwise the cage cannot well be too light and airy.—B. P. BRENT.

(*To be continued.*)

DRONE INFLUENCE.

ON the 19th of October I met with another instance in which common queens had been hybridised by my Ligurian drones. Although the distance in this case (one mile) was less than in the two former instances which have already been narrated, the circumstance was in other respects still more remarkable, only one stock having survived last winter had thrown two fine swarms, and both young queens had been impregnated by my Italian drones. What rendered the affair more amusing was the fact that the gentleman to whom they belonged appeared to share Col. Newman's predilections in favour of the old race of black bees. His own, in particular, he informed me, were brought from Cornwall, and were a peculiarly "fine sort." He really appeared not a little chagrined at my pointing out a goodly number of Ligurians in the old hive as well as in the second swarm; but seemed to obtain some little comfort in disregarding my recommendation to "take" the first swarm and preserve the young queens. I, therefore, drove the old stock; and the next day forwarded its hybridised queen to "A NORTH LANCASHIRE BEE-KEEPER," with a request that her adventures might be duly chronicled in THE JOURNAL OF HORTICULTURE. I am, however, quite uncertain whether she may have reached him, as neither her arrival nor that of a post-office order which preceded her has been acknowledged.

These repeated instances which have come under my observation of young queens being hybridised by Ligurian drones, at distances varying from one to two miles, and which are, probably, but a small minority of the cases which have actually occurred, prove how general and wide-spread that influence must have been. As the Ligurian species becomes more extensively disseminated, it appears probable that few apiaries will entirely escape; and it is just possible that before very long we may learn with what feelings of horror and amazement Lieut.-Col. Newman himself may have contemplated the hated orange colour, flaunted before his eyes by his own bees in his own apiary.—A DEVONSHIRE BEE-KEEPER.

HOW IT FARED WITH THE PLUVIANS' SEASON OF 1861.

(*Continued from page* 120.)

Honey Harvest—Straining Honey—Beat-out Bees in Frame-hives—Ligurians.

WE would have been quite honeyless, but incidentally reaped a little harvest after this fashion. There were two hives we wished to people with the swarms from a couple of stocks that thought better of it than swarm in such weather. On the 15th of August they were densely packed, crowding up front and sides close to the suffocating-point. We had heard a few days before of two stocks having been lost this way: we therefore inverted these, and beat out the entire population into the hives. Their little honey we found stored chiefly in the upper box of both, the great body of the comb being firmly attached to the moveable cross stick in the tier of ekes below, both having been wrought on the adapter plan (described in No. 5.) We therefore, severed with a thread the boxes from off the ekes; these with a few choicer pieces of end-combs, sent in to the house. The tier of ekes we found to contain, besides the little honey left, a large quantity of brood, which we were loth to sacrifice. To strengthen two second swarms we slipped a set of ekes below each, which, crowding down upon the combs, slaughtered a little band of nurses, which, faithful to their duty, would not quit their post—and took their place.

On going in we saw female fingers had been busy with the combs; these had been broken into little portions an inch or so square, while yet warm, and placed on a large hair-sieve, or search, used for the purpose; on raising which we found the wash-hand basin underneath already full. Another, subsequently barely filled was all our honey harvest.

It generally gets a second run through the sieve to catch any speck of comb that may have fallen in. What a creeping thrill of horror you must have sent through many a reader by quoting, uncondemned, the abominable Yankee receipt in No. 24. "Honey, [illegible] bee bread, well watered, put into a pot to simmer [illegible] the fire." Dreadful! Honey connoisseurs very properly object to the most distant approach to the fire, to facilitate its running through a flannel bag even, and will not allow a steel knife to touch their comb. A fruit one might serve the end in "B. & W's" excellent plan.

Beginning of September found our beat-out bees, although nearly 6 lbs. in each, still in almost combless hives, although regularly fed at intervals; and, having had painful experience of how little honey can be manufactured out of 20 lbs. of sugar at the end of the season, saw we must change our tactics. The first idea was to put the two together, and feed on; then, recollecting the ekes, withdrew them, and found the brood hatched out and honey gone, so turning out a couple new hives, cut up the empty comb into squares and fitted into their frames; with a long-piped tin can (such as enginemen use for oil), introduced as much food as would supply their immediate wants. Had the combs been built, not merely jammed into the frame, we would have introduced their full supply at once, which we had found previously saves the bees the labour and waste of storing. Then, reversing the empty hives, placed the frame ones above, a warning knock or two all round, a rest to allow them to load with any surplus store, and then rub-a-dub, up they go. Never did party of emigrants, shivering on the Southern Ocean on short allowance, with starvation staring them in the face, put foot on land of plenty with greater manifestations of joy than did our poor beat-outs. It was quite a treat to see them chase each other in and out when set upon their boards; then pause to hum forth their delight with quick fanning wings: first transports over, off they go in quick succession to the fields, to return shortly, tearing in three and four a-breast, heavily pollen laden. Curiosity tempting us to raise the frames a few days thereafter, found all deficiences made up, passages cut where most required, the whole combs fixed with a firmness round and round the frames that "A Devonshire Bee-keeper," might safely transmit one of his alpine stocks to the antipodes without fear of catastrophe. They have since had a sufficiency of food administered, and we little fear the beat-outs will not be our worst stocks next season.

In reply to your correspondent's other inquiry, as to "How it fared with our Ligurians?" We can only say that "A Devonshire Bee-keeper" keeps us as some of our rougher sex fair ladies of a certain age—still in the world of hope, none of the goodly array of twenty-four queens of stocks having come our way, otherwise it would have afforded us much pleasure to supply our southern brethren with some data as to our experience of the yellow foreigners, and their capabilities for the chilly north.—A Renfrewshire Bee-keeper.

UNITING BEES.

I was more than astonished to observe, at page 98, so very able a correspondent as "A Devonshire Bee-keeper," instead of confirming my correction of the editorial "slip of the pen," of the 28th ult., regarding the junction of "A. W.'s" hives, endorse that error.

Surely your contributor, from his clever manipulations with queens, has attained a talismanic influence over them, second only to Wildman's, when with him they can be induced along with their subjects to follow a course so opposite to their instincts and universal practice.

In my experience of storifying I never yet met with an instance in which the bees in such circumstances did not ascend; and I cannot suppose that a single apiarian, at all familiar with that system, will coincide with his opinion.

"A. W." may possibly kindly inform us by-and-by if the result in his case was any variation from the general rule.

I propose in an early Number approaching the vexed question as to how, if not invariably without even a slight skirmish, at all events no great pitched battle, the forces of the confederates may be best made to coalesce with the federals into a lasting union.—A Renfrewshire Bee-keeper.

MISADVENTURE WITH A HYBRIDISED QUEEN.

As I can quite well fancy the gratification and amusement it must afford "A Devonshire Bee-keeper" to learn the subsequent adventures of the little emigrants despatched from his apiary, I will endeavour to describe at length what befell the party of the 10th October.

On Monday evening the 14th the little box reached its journey's end. On applying it to the ear all was still, so having my misgivings set it on the parlour table and undid the screws; was agreeably surprised to find not a bee dropped, on the contrary, all clustering upon the comb in fine condition, moving along so briskly that I was glad to slip a piece of glass on in lieu of the lid to prolong my examination of the neat and careful arrangements you had provided for their comfortable and safe transit. I endeavoured to get a glimpse of the queen, in this, however, I was unsuccessful, but could see distinctly the orange belts on several workers establishing their Italian paternity. I then replaced the lid with only one regret, that it was not a party of the "real Mackay's" that had so safely reached me. Before removing it from the heated room, there was one defect in your plan caught my eye, capable, I think, of improvement, and to which, at that moment, I little imagined I would afterwards have mainly to ascribe the cause of failure.

The following day (Tuesday) it rained incessantly, as only we Pluvians know how; the next, having occasion to go from home, was anxious it would clear so as to afford me an opportunity of capturing the queen and putting things in a train before going. I had half a mind to transfer the hive to an outhouse, and there under cover attempt the operation, although I knew it would cost me a loss of many workers. However, as luck would have it, it faired half an hour before dusk, so summoning my "Old Botherton," who, by the way, from his very long experience, evidently thinks himself vastly a-head of his master's innovations, and in the present instance thought disturbing a hive at that time in the evening, with everything dripping wet, for the senseless proceeding of introducing a queen I knew nothing of for the best-breeding young queen of my most prosperous stock, must be, after all, sheer nonsense. However, setting him in better humour by ordering his pipe a-going, caused him to introduce a few whiffs at the entrance, ran it in, undid the screws, raised the frame to the right of central slide, but no queen to be seen. How could I expect to find her at that hour, now getting dark? chimed in "Botherton," at my elbow, let it down again, raised the one to the left, and there she was, the first bee that caught my eye, scampering along, plainly observable against the white background of pure sealed food, lately introduced into this season's comb, caught her by the wings and placed her below a tumbler, then set in the frame and ran in the slides so far, laying a sheet of perforated zinc above, on which I placed the inverted unlided box containing the "Newcomes."

With the proverbial canniness of my countrymen, thought, in case of mishap, it might be well to preserve the very large handsome monarch perambulating the tumbler; so, getting my hands on a little circular lappet box I took it to be bored numerous little holes for ventilation, and fixed a piece of empty comb in the centre, to which I transferred the queen, throwing over the top the black-crape veil that defended the physog. of "Botherton." Finding picking up bees at the entrance a slow process, I got a quill cut in the form of a tooth-pick, and into it a little honey. By inserting at the entrance, I found from the attraction of the honey I could raise half-a-dozen at a time into the box, the edge of the soft rail wiping them into it. I had by this means a goodly train in a few minutes to remove along with her to the house, placed a little feeding-bottle above, and, from the pleased hum, judged they were employed carrying it into the comb.

Wednesday absent all day till late in the evening. Our people reported then that this particular hive had been in a very confused state all day; bees running in and out, and up the front: this surprised me, having their new queen above.

Thursday forenoon when all ready for the inauguration, you may judge of my disappointment on reinverting the little box, to find a number of the inmates dead, the remainder in a damp clagged condition, arising from the heat of the strong colony melting the food that had accumulated on the bottom during their journey coming down upon them. After the box was inverted, I took out the comb and spread the bees upon a board, and went over them singly several times without seeing anything of a queen.

My first surmise, could "A Devonshire Bee-keeper" have playfully wished us to make an involuntary experiment to establish the truthfulness of the doctrine of "Parthenogenesis?" was equally absurd with the second. Could she have been abstracted by the way? ending with the only feasible one that she was one of the dead bees, whose queenly proportions the fell destroyer had so shrunk up as to cause her, in then clogged condition to be undistinguishable from her meaner subjects.

The improvement I hinted at above would be instead of making the bottoms of your boxes fixtures, secure with four screws as in the top; any loose food could be thus removed with the bottom, and if left on the zinc without inverting, a piece of glass being substituted for the top after it's removal, would thereby afford a glimpse of the junction.

The strange bees I put into a glass on the top in a heap, admitting the natives, who shortly appeared with them at the entrance quivering in their last agonies.

Thinking it high time to look after my dethroned queen, fetched the little box and drew off the rail, lifted out the comb, now stored with food, the queen pacing along it; put it to the entrance into which she slipped with as much apparent delight as her subjects at receiving her: thus ended my first attempt at introducing a queen all the way from Devonshire. Thankful it was not worse, and hopeful my next with a pure Ligurian might be more successful.—A Renfrewshire Bee-keeper.

[The moral of the foregoing story and very many similar ones is, that I find it impossible to continue the troublesome process of rearing and despatching young Ligurian queens, backed as it is by repeated failures attending their introduction to stocks of common bees. I intend offering to such of my subscribers as may not have received queens the option of taking Ligurian stocks at a reduction of one guinea from the ordinary rates, and myself guaranteeing the safe transit of the queen and the bulk of the bees in each case.—A Devonshire Bee-keeper.]

Rabbit-breeding in France.—The *Aigle du Midi* states that a farmer named Pinel, of Revel, in the department of the Haute-Garonne, has lately commenced breeding Rabbits on an extensive scale for consumption, and that he expects the operation to be successful in a commercial point of view. In the space of five months from May last, he, with 50 female and 5 male Rabbits, obtained 1300 young, and he now intends to have 200 females. By allowing these latter to produce only every two months, instead of every month, as they can do, he calculates that he can procure 500 Rabbits a-month, or 6000 a-year. He has had constructed a large shed, 30 mètres long by 20 mètres wide, and 40 feet high, and in it are 140 compartments, of which 10 are set apart for young Rabbits separated from their dams, 14 for the adults, 12 for the males, and the rest for doe Rabbits and other purposes. Pinel makes this calculation:—Out of 270 Rabbits born every month the average number of deaths is 12, so that there remain for sale 258, which can be disposed of for 1f. 10c. each, making 283f. 80c., or 3405f. 60c. a-year. This sum is increased to 4653f. 60c. by the sale of the manure. The expense of producing 258 Rabbits is estimated at 1372f., so that a clear profit remains of 3281f. 60c. As Rabbits can be fed in great part on the refuse of the farm-house and farm-yard, it is thought that peasants might, like Pinel, breed them with advantage.

VARIETIES.

Maltese Garden.—Behind one of the dwellings is a very interesting spot. This is a beautiful garden buried deep among the lofty walls and defences of the place. It is a bright little gem in a wilderness of masonry, and is almost the only real garden, in the English sense of the word, that exists in Malta. A magnificent growth of dazzling bright immense Geraniums abound here, such as would carry off the first prize in an English horticultural exhibition. Large-climbing Convolvuli and masses of Mesembryanthemums trail about the walls and rockwork. Fine standard Roses and smaller Japan and monthly ones are interspersed among the beds, which are thickly covered with the bright blossoms of annuals. Palms, Lemons, Oranges, and Myrtles, overtop the whole. Even in England this would be a pretty garden; but it shines as a far more interesting charm of verdure and bright colour from being buried deep among the stone walls and terraces of a Maltese peninsula.—(*Tallack's Malta.*)

The Law of Seaweed.—The laws of flotsam and jetsam, of waifs and strays, received a curious illustration the other day at Cahirciveen Quarter Sessions. The plaintiff in the case was a farmer named Daniel Fenton; the defendant was John Reilly, apparently an agent or bailiff of no less a personage than the Marquis of Lansdowne. The case excited very considerable local interest, and the decision arrived at is of importance to all farmers dwelling on or near the sea-coast. It appears that the winds blows great quantities of floating seaweed into Ballinskelligs Bay. These floating weeds are valuable as manure, and for generations the neighbouring farmers have collected them. We gather from the trial that the Marquis of Lansdowne has endeavoured to prevent the farmers from gathering in this weed, which the wind sends floating on the waves to them. Daniel Fenton, the plaintiff, knew the law. He was quite aware that if the seaweed rested on the shore, or became embedded on the rocks, he dared not touch it. He adopted the curious expedient of backing his cart into the tide at extreme low water; there he and his assistants, proceeding up to their waists into the sea, collected the weeds as they floated, with long rakes, and placed them in his cart. His cart was full and he was preparing to drive home, when John Reilly and his assistants overturned the cart, and threw the weeds into the sea. It was nominally to recover the value of the weeds—4*s.*, that the action was brought. The real question at issue was, whether the Marquis of Lansdowne, or his agents, had power to prevent the collection of the seaweed. The Chairman of the county considered that the question was simply, whether the plaintiff had a right to take floating weed, and he ruled in the affirmative, on the ground that "the moment the water covers the place between high and low-water mark, it becomes the Queen's highway, and any weeds taken floating become the property of the captor." He concluded by giving the plaintiff a formal decree for the 4*s.* It is very probable that Lord Lansdowne knows nothing of what his steward or agents have done in this case; they were, of course, performing what they believed to be their duty to their employer; but the exercise of a private right, real or supposed, to its extreme limit, creates in the mind of the poorer classes anything but kindly feelings. The question decided at Cahirciveen is by no means so trifling as it at first appears, and as it would be if confined to a single locality. The rights involved in it really extend wherever the sea wind blows, and the tide brings in to us its waifs and strays—that is, round the whole circuit of the Irish coast.—(*Irish Times.*)

Rancid Lard.—A correspondent of the *Country Gentleman* states that chloride of soda will render rancid lard perfectly sweet. He had 40 lbs. of rancid lard, and he put 3 ozs. of chloride of soda into a pailful of hot water, and then put in the lard and boiled the two together for an hour or two. When nearly cold, the lard was taken off and afterwards boiled up. "The colour was restored to an alabaster white, and the lard was as sweet as a rose."

OUR LETTER BOX.

Killing Poultry (*A Subscriber*).—The most merciful and best way is to dislocate their necks, and then run a knife through their neck, just below the ear. All sensation is taken away by the dislocation. The bleeding renders the flesh whiter.

Carriage of Poultry to Crystal Palace (*H. Y Z.*).—If you write to Mr. Houghton, Secretary of Poultry Shows, Crystal Palace, Sydenham, he will write to you all the information you require.

Pigeons (*G. L.*).—Your description of the Pigeons is almost the same as Mr. Moore (1735) gives of the Laughers, so that they may be of that breed; but I could not give a certain opinion without hearing them coo.—B. P. Brent.

Swans Dying in the Water (*G. B*, *Woodside*).—A gallon of corn per diem ought to keep two Swans in good condition; yet it seems curious they should die just as their natural food, the weeds, should be rotting and disappearing from the water. The small number of grains of corn in each instance is also curious. You do not say if they were thin. If they were, we should be inclined to think their food has not been sufficient, and that the quantity that kept them in the summer while there was plenty of natural food did not suffice when that failed. Are you sure the Ducks cannot reach the place where the Swans' food was placed? If they died in good flesh and condition, it was from something they picked up; but it is hard to poison water-fowl.

LONDON MARKETS.—November 18.

POULTRY.

Throughout the year we have had to report bad trade and bad supply. It seems as though it would be a Cuckoo-note to the end, for it is again our report this week.

	Each—s.	d.		s.	d.		Each—s.	d.		s.	d.
Large Fowls	3	6	to	4	0	Grouse	2	0	to	2	3
Smaller Fowls	2	0	,,	2	6	Partridges	1	6	,,	1	[illegible]
Chickens	1	9	,,	2	0	Pigeons	0	8	,,	[illegible]	[illegible]
Ducks	2	0	,,	2	6	Hares	2	6	,,	2	[illegible]
Geese	6	0	,,	7	0	Rabbits	1	4	,,	1	[illegible]
[illegible]	[illegible]	[illegible]	,,	[illegible]	[illegible]	Wild	0	8	,,	[illegible]	[illegible]

WEEKLY CALENDAR.

Day of Week.	NOV. 26—DEC. 2, 1861.	WEATHER NEAR LONDON IN 1860. Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			deg. deg.			m. h.	m. h.	m. h.		m. s.	
Tu	Urtica nivea.	29.381—29.356	42—32	N.E.	.31	39 af 7	56 af 3	0 m.8	24	12 27	330
W	Uropetalon scrotinum.	29.409—29.387	47—36	E.	—	40 7	55 3	27 1	25	12 7	331
Th		29.710—29.642	48—35	E.	.02	42 7	55 3	49 2	26	11 46	332
F		29.791—29.635	46—39	E.	.18	43 7	54 3	16 4	27	11 25	333
S	St. Andrew.	29.688—29.564	50—33	S.	.12	45 7	53 3	43 5	28	11 3	334
Sun	Advent Sunday.	29.763—29.655	51—42	S.	.01	46 7	52 3	9 7	29	10 41	335
M		29.640—29.499	49—39	E.	.01	48 7	52 3	sets	●	10 18	336

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 47.4° and 34.7° respectively. The greatest heat, 62°, occurred on the 1st in 1857; and the lowest cold, 14°, on the 30th in 1856. During the period 121 days were fine, and on 117 rain fell.

ORISTS' FLOWERS IN THE ASCENDANT.

NMISTAKEABLE signs are manifesting themselves in various quarters that my old friends and favourites, florists' flowers, are about to raise their heads once more, and that there will be found shortly many who will not begrudge the time and trouble necessary for their proper cultivation. This is a result in which I am sure many will rejoice, and I may, therefore, with some degree of propriety, draw attention to some of the symptoms of returning life, which are apparent to me, and which lead me to the conclusion that the year 1862 will be, if the season be at all favourable, the most interesting that we florists have enjoyed for many years.

Many of the readers of The Journal of Horticulture are aware how constantly I ve harped upon the subject of a national exhibition of ıriculas. For the last two years I have tried my most to stir up growers to something of the kind, and ıt year my valued friend, the Rev. George Jeans, of ford, and Mr. Turner, of Slough, contributed someıat towards that end at one of the spring meetings of e Royal Botanic Society. Well, this month, I have ceived a communication from York, saying that the owers, both there and at Halifax, are very anxious to e this object carried out, and requesting co-operation. ıis looks hopeful, though there are many difficulties as time and place yet to be succumbed before this is complished, for there have been the stumblingblocks the way of these national shows, and which have ripped the Carnation and Picotee Society of its national aracter, and made the Tulip one so difficult of arrangeent. But withal, I cannot but hope that next year will some advance made towards it; and, it is to be hoped, actual accomplishment. It will gladden the hearts of Auricula growers. It is an encouraging thing, too, connection with this flower that so great a demand ists for it at present. I sent a list of some I wanted a nurseryman, and was answered that he had only one the sorts to sell; while another has applied to me know if I had any surplus stock to part with; while om other growers I hear of demands made which they e unable to meet. All growers of this flower would fer a great favour on me and on the Auricula public they would keep short and simple notes of their bloom, specifying the kinds, and how they bloom with them, as a collection of these various experiences would tend greatly to fix the value of the various kinds.

Another proof of the increased attention given to florists' flowers; and the force of opinion on such matters is to be found in the very significant fact that a contemporary, who heretofore has ignored the subject, and who wrote some very hard and ungenerous remarks on the Dahlias and Gladiolus, has latterly actually given articles on the subject. And though they have been infinitely amusing to all who know anything of the subject, reminding one very much of the fable, in which a certain animal assayed the part of a lap dog to the infinite horror of its master, yet the fact is worth something, for we may be sure it would never have ventured on these had not public opinion and taste run that way; and although it may be a question whether its advocacy may not, as is usually its fate, do more harm than good, yet we accept it as a good sign. I believe that I am justified also in saying that the schedule of the Royal Horticultural Society for the coming year will be the most liberal towards florists that it has ever issued, and that each darling pet of the fancy will be honoured in its proper season.

The Royal Botanic Society, which has always taken a wide and liberal view of this subject, and has encouraged florists at its exhibitions, is going to increase the number of its small spring shows, and thus give encouragement to other supporters and friends: and the Crystal Palace Company will hardly be behindhand. It will be a busy year for exhibitors, and an interesting one for frequenters of the exhibitions. I think also that amidst other flowers the stir is equally great. One friend, who has raised the best Verbena of the year, Foxhunter, says that he has saved an immense quantity of seed of the finest varieties, and that he seriously contemplates taking in a portion of his farm to grow them. The season has been a favourable one for producing seed, and I doubt not from various quarters we shall have many novelties to examine and report on at the various places where such things are shown. The more the merrier. But, my friends, be careful! Consider what good things we have, and how difficult it is to beat many already enjoying the smile of public favour. You will have something to do, Mr. Millar, to beat Foxhunter; and so will you, Mr. Perry, to match some of your beautiful-eyed varieties.

Then look at the Gladiolus. Why, there is such a rage for it, that all the "Doctors" in the world can no more stop their almost annual growth than could Mrs. Partington keep out the sea. My friend Mr. Standish is overwhelmed with demands for sorts which he cannot satisfy; and we shall see, I expect, such an exhibition of them next season as has never been witnessed before.

Then there is our dear and beloved Queen—the Rose. How eagerly she is sought after this season! How England and France have been hunted over to supply the demand! Some sorts are absolutely unattainable, and those that are are very much dearer than usual. Oh! what a tournament, if we have anything like a favourable season, we shall have in her favour next year!—what challenges will be accepted!—what rivalry of charms!—what high-sounding eulogies! — what extravagance of language to describe her beauty! Ah! may I be there to see and hear.

Pansies, too—aye, turn not up your noses, my gentle heroes, Pansies are re-appearing, and see if we have not around the stands many a goodly bevy of fair dames and gallant men who will take far more interest in them than in the sporting of some new Caladium, or the fructification of some out-of-the-way Fern. I might run through the list, and show that there are many signs of returning life to us; but let this suffice. Dahlia growers, do not be afraid; do not throw away your roots. Your pets will hold their heads well up; and, in fact, to all florists, professional or amateurs, I say take heart of grace; but do let us have the benefit of your observations, and we shall then see our favourites more than ever established in the good graces of the public. *Au revoir!*—D., *Deal.*

CALLS AT NURSERIES.

MR. SALTER, VERSAILLES NURSERY, HAMMERSMITH.

TRUE as the magnet, there is no place like home after all. You may go to the "inner quadrangle" of the soul of gardening at South Kensington, or to the crystal fountains on the heights of Sydenham, or to court, or camp, or cloister, on high festive days, and satiate, to the full, the feelings of the hour, and yet there is a void. And so it is in botany and gardening, and in Sam Slick "natur" there is like that which, alone, could fill up the void here, and a visit to Versailles Nursery, and to Mr. John and Mr. Alfred Salter, is just like going home, you find nature there. I mean at your own fireside, and in their winter garden, which is just now in the very height of its fashionable season, full of "Good Gracious" things, and quite as full of novelties and new notions.

The first turn was to see all the new Chrysanthemums which Mr. Salter sent out for the first time last spring, beginning with Lady Hardinge, rose and blush tipped; a splendid incurved flower. Rifleman, which was very choice at the two great exhibitions. Boadicea, the nearest to Novelty in size, and the first good improvement on the size and tints of Dupont de l'Eure. Ariadne, quite changed from what it was as a seedling, a creamy buff. It is now one of the most telling flowers in a conservatory, as deep at the circumference as Wonderful, and hence shading inwards lighter and more lightly to the very centre as no wool-work could imitate. Garibaldi, a very large, flat, incurved flower, of a reddish-chestnut. Prince Consort, a fine, full, incurved, dark purple. Caractacus, a fine rosy carmine, tipped blush. Penelope, a splendid rosy orange, flower closely incurved. Phœbus, a golden orange, and a most valuable conservatory flower, coming in late, and keeping long in bloom. Pandora, the nearest in colour to Golden Queen of England, and described so from the exhibitions. Little Harry, a new colour, a golden amber, and a public favourite. Yellow King, a sport from his ancient majesty, and good as he. Golden Hermione, a sport from Hermione, and equal to herself. Emily, a shaded French white, or what they call delicate blush; but all blushes come of delicacy.

The next group is the tiptoe of 1862. The new sorts to follow the above next spring, and really some of them are vast improvements on their respective tints and sections. General Slade, one of the very best of them; Dupont de l'Eure is good; Boadicea is better; and General Slade is best in that style, best in size, shape, and colour. Carissima, a fine creamy white flower, flushed all over with various shades of pink; a lovely thing. Duchess of Wellington, a large, rosy lilac flower, of great merit. Sparkler, a perfect model of true natural incurvity. Sparkler is [illegible] the same degree from Pio Nono that General Slade holds in [illegible]pect to Dupont de l'Eure, and the two will be favourites for years to come. Miss Slade, a fine, full floret, and pale sulphur, [illegible]ying pure white. Ion, a fine pure white, fully incurved. Dido, [illegible] white globular flower suffused with canary, and will be an [illegible]hition plant, being dwarf, free, and constant. Sylphide, [illegible] lilac of the first class in character. Dr. Brock, reddish-[illegible] inc[illegible]ed. Cherub, a magnificent flower, an amb[illegible] [illegible] [illegible]nts, and suffused all over with ligh[illegible] [illegible] last floret. Seraph, a fine pal[illegible] [illegible] [illegible]co, a fiery red; a [illegible]arf fre[illegible] bloome[illegible] [illegible] lighter shade [illegible] [illegible]dicea [illegible] qui[illegible] [illegible] a fine golden yellow. White Themis, a new sport; fine as the old goddess herself. Julia Grisi, a splendid bloom, which will vie with the Christinas at the exhibitions; a transparent peach colour, or peach suffused with lilac; a grand thing. La Belle Blonde, a large blush white. Lord Ranelagh, orange red running into salmon, "turned up" with golden yellow. Mr. Broome, in commemoration of the finest qualities of a fancier, as they have been exemplified in the ways and works of the godfather of the whole family in the Temple Gardens, and in the centre of London; a fine large lilac fully incurved. And Edith Dombraine, a true French white flower of striking beauty and novelty; very pretty ladylike thing, and the young lady herself could hardly have picked out a better namesake in the collection.

The next move includes all I could see of the new Pompons for next spring; they and the best of the old ones occupy a house by themselves, which is a better arrangement for comparing and criticising them. Lucinda very good indeed, and a new colour made out of rose and lilac; a very full flower. Acis, very pretty after Model. Capella, dark red chestnut, and very free bloomer. Orange Boven, a new style, a Pompon incurving up its developed florets; it is a dark reddish-orange. Citronella, pure citron colour, and very free habit; also incurved. Sienna, a dark red orange destined for combat at the exhibitions. Brown Mirror, a shot-silk-like cast over its brassy visage, which is round as Bachelor's Buttons. Apollo, a hybrid-chestnut red tipped up with orange in the style of Auguste Mié, a dwarf plant and free bloomer; and Medora another hybrid of a rosy lilac colour. Four or five years back I noted a novel departure from the normal type of this family from this same nursery, in a kind called "Yellow Fringe," a seedling of 1852. I inquired after it, but could not now find it in the collection; but Mr. Salter promised me the "Yellow Fringe" would be forthcoming, and when that comes I shall show you how the Japanese obtained the Dragon section, which Dr. Lindley figured this last summer. Louis Bonany has already the Dragon, or rather the Stag-horn, more in the mouths of half the florets; and there is a third kind in which the ends of the straps of the florets run stag-horn fashion.

The misfortune is that our florists fight against Nature the moment she freaks into novel forms and queer shapes, and confine us within the confines of the carpenter's compasses. But the following is a recast of Pompons from the older lists, all of which are of first-class merits as pot plants for private or public occasions. Florence, bright rose, and free bloomer. Reine des Anemones, pure white. Calliope, bright-red Anemone. Miranda, rose with silvery edges. Miss Talford, white. Cromatella, yellow. Trophée, mixed rose and lilac. Justine Tessier, sulphur. Christiana, yellow, with brown tips. Andromeda, cream, with brown points. M. Van Houtte, chestnut and orange. Ida, clear yellow. Sultana, dark rose. Musidore, a Liliput of chestnut colour. Diana, white. Lara, rose-tipped cherry. Miss Julia, red chestnut. M. Eugène Domage, white. Mrs. Turner, white hybrid. And Madam Sentir, the most generally liked by ladies of all the Pompon race, except the pretty little honeycomb dear, called Reine des Anemones, which is a month earlier than Madam Sentir, which Mr. Salter calls a perfect gem.

I would stick faster to the following kinds of the big Chrysanthemums than make up my book from the reports of the exhibitions:—Jardin des Plantes, of which you heard enough for one year. General Hardinge, large Indian red. Alfred Salter, large rose. Golden Queen of England and the Queen of England, rose, to light blush. Progne, dark purple. Bouquet des Fleurs, dark red chestnut. Cassandra, all shades of blushes. Julie Lagrave, a dark red Anemone. Novelty, the largest blush you ever saw. Wonderful, the best purple in the family. Sulphurea superba explains itself. Léon Lequay, bright rose. Versailles Defiance, ditto. Aimée Ferriere, silvery white, tipped or mottled with cherry. Alma, a dark flower of great substance. Dr. Rosa, dark rose. Miss Kate, delicate peach, and changeable as a blush. Etoile Polaire, large bright yellow. Marshal Duroc, mottled, rosy lilac. Gluck, the earliest of the Anemones, and the largest yellow of them. Nancy de Sermet, pure white Anemone, old a. Annie Salter and Yellow Perfection.

Nothing was ever done less wise than to have driven the tasselled Chrysanthemums out of cultivation, for in them we had the blood and the germ of a new race to vie with the best of the German Asters. I recollect when the best of them were [illegible] [illegible]lled weeds of no account; but there is one old Chrysanthe[illegible] [illegible]et, and it is in this collection of Mr. Salter's, from which [illegible] of German-Aster-like Chrysanthemums, might be got if the Guernsey seeders could hit on the strain. The name of this is Madonna, a large, bold pinky flower.

Globe-flowered ones, round as cricket-balls, will soon be favourites with the public, Gueldres Rose is yet the best of them. If some insist on all being incurved, the game will soon be up with them, as it was with the sale of Pelargoniums just at the time of the appearance of the French spotted sorts, from which a little variation is still obtained. Mr. Salter is well aware of this, and he arranges his winter garden differently every year to make a change.

In looking over for noticeable plants among this part of the collection, I made a discovery of which I am more proud than if I had hit on a new comet, and the reason why I am so proud of it is this. I heard that Mr. Moore, the Secretary to the Floral Committee, had been recently over the collection, and Mr. Moore is known to know more about Ferns than I do of Geraniums. Yet I found the newest and one of the best Ferns in this world in this very collection after he did not see it. You might call it, so to speak, a tree of Pteris argyræa, but then it has no stem and cannot be a tree. The leaves of it, however, are from 3 feet to 5 feet long, and the footstalks of the leaves are bare as a brazen face the full length of 3 feet. The plant is the most splendid one that ever I discovered among Ferns, although I have slept on new beds of them for whole months at a time—that is, at bedtime. The Centaureas have been increased two kinds since I was there before. The Centaurea ragusina is an improvement on the style of Cineraria maritima. Centaurea gymnocarpa is made into low standards, and candidissima is rooted from a fry of young side shoots in three weeks, in sand under bell-glasses, kept dry and cool the first fortnight, then plunged in heat they root at once. But when you have a stock of them, the easiest way is to keep it up by making summer-out-of-door cuttings of the large shoots, which root as freely as Punch, only they take a little longer time to do it.

The big-leaved plant I noted there last year, Wigandia caracassana, which " D.," of Deal, saw in bloom so much about Paris this autumn, has also flowered at Hammersmith with Mr. Salter in long branching spikes. Some fine Cannas are kept for the same exotic looks out of doors, gigantea, discolor, indica, and zebrina are well suited for such work. But is the zebrina of continental gardens a real Canna? The Doctor should see to it, for we have it as such under his authority; but under my authority, which is no authority at all in the case, the plant is no more a Canna than I am, but the old Maranta or the less old Calathea zebrina and nothing else. There is also a stock of several other exotics, as represented by Caladium esculentum; Astelia Banksi, a rare good old thing; a greyish-silvery, soft Pitcairnea-looking plant with long leaves ending in longer whipcords, and throwing up the flower-spikes as Pine Apple plants do, from the centre of the old parts of the plant. Variegated Yuccas, and Bamboo-like Grasses, and Variegated Ivies, of sorts; Araucarias, Orange trees, Camellias, and very fine Myrtles.

There is also in the winter garden a new Begonia, which brought out some of the natural history of the Floral Committee, who could liken it to nothing so much as to the ears of the elephant, while in reality it is the very image and likeness of the old Saxifraga ligulata multiplied four times in the four ways from the centre. This will soon figure among fine-leaved plants.

Mr. Salter has been among the Snapdragons for a long while, and his stock of them is very large and select as well as curious. His collection of variegated plants is the richest in kinds of all I know, and his herbaceous border and rock plants would puzzle one to know where they all came from, and he is constantly at work on the fancy Pansies, fancy Daisies, and the new fancy Pyrethrums, at which he has been lucky for many years.

D. Beaton.

A FEW DAYS IN IRELAND.—No. 6.

MR. WILKIE'S, PHŒNIX PARK.

Each age is generally marked by some peculiarity and distinctive characteristic of its own. Some mode or custom becomes so fashionable, that everybody must pay court or homage to it, or be looked upon as singular and eccentric, as a pretty young lady would now be considered, were she to appear in genteel circles wearing one of those coal-scuttle bonnets that were all the tiptop among the *belles* in our boyish days. To this general rule as respects customs and fashions, gardening has been no exception. It, too, has had, and still has, its manias and its furors. We may smile at some of the doings of our predecessors in this attempt to reach the heights of perfection in matters of refined taste; but we may also rest assured, that our great and wise doings, and our attempts to combine the natural, the beautiful, and the useful, will just be as well laughed at by our more advanced descendants. Looking at the matter calmly, however, we shall find that instead of passing over the doings of the past with the sneer of contempt, it will be wise policy in us to note, that the peculiar systems adopted were just peculiarly fitted to the times and the circumstances that brought them into action.

For instance, when our country was too much clothed with natural timber, there was so much of the romantic and the picturesque, that man who always likes his labour to be seen and his work appreciated, could only do so by introducing straight avenues into his park, straight walks, straight terraces, and straight walls and hedges into his garden, and then develope the purely artistic still further, by clipping and training evergreens into all sorts of shapes, having some resemblance to birds and animals, and pans and kettles for ultimately developing his cooking capabilities. Then, again, when circumstances were changed and the forests in great part disappeared, and regular fields were laid out, and straight hedges and hedge-row timber gave something of a regular geometrical character to the appearance of a country, just merely for distinction sake and the law of contrast, picturesque scenery began to be introduced into our parks, and groups of trees were thus formed, so that a distinction might be made, alike from the massive forest and the single filed hedge or avenue, and this was carried so far that sweeps and curves were often made near mansions where straight lines seemed from the nature of the case to be demanded. In all such circumstances there was a reason why the art employed should at once be seen and acknowledged.

Just so with the mixed flower garden style, where shrubs, and Hollyhocks, and Dahlias occupied the centre of large beds; and lesser shrubs, and lesser flowering plants came down to the outside, and thus presented something generally pleasing all the year round, and is anything but despisable now. Until large masses of flowers in woods and glades gave the idea of the bedding or grouping system, and the fringing exotics to give rich massive displays in summer, which is certainly very beautiful and striking in its effects, and just now in the very blaze of fashion. Like the other systems we have alluded to, it has the recommendation of telling that the hand and the brain of man have been there, as Nature, which some people tell us we are to imitate, could never have produced if left to herself, such masses of contrasted and shaded colouring. In all these cases gardening has been an art of design, design intended to be seen and not concealed, and the seeing the effects of which are the chief recompence for the toil and expense involved.

Striking as the bedding system of flower gardening is, it seems now to have reached the zenith of its fame. The mind longs for change—it pants after a massive background to throw back the dazzling colours; and amid the bewilderment of such splendour it sighs for the relief of light and shade instead of level massive gorgeousness. Everybody may act the prophet now-a-days, and so we may out with our vision of the future as respects ornamental gardening. First, there will be the breaking-up of the level monotony of many flower gardens; then there will be the introduction of suitable backgrounds to these gardens, and the not leaving long ribbon-borders exposed in the middle of an open lawn; then there will be the grouping of elegant tapering evergreen shrubs, not in the flower-beds, but forming part of the group, as so many relief-stand-points to the eye, and as so many means alike to enhance and relieve the masses of colour; and, not to enlarge, by-and-by there will be such a general satiety as to colour, that beauty of form will be sought after as a desirable relief, and equally showing proofs of design.

The evil most likely will be, that just as in the case of cockle-shell bonnets and unapproachable hooped petticoats—(we approve of hoops if at all moderate)—each of these modes, like those which have preceded them, will be but too generally followed. Our wish would be that then, and also now, each individual would have the courage to carry out his or her distinct comprehension of the beautiful. If a person lives long enough he will be sure several times to be a leader of fashion even without knowing it or caring for it; just as the worthy mechanic who took such care of his marriage coat that he wore it every Sunday afterwards through a long life, and left it a good coat after all, found that several times the whole of the people of the neighbourhood imitated the cut and the pattern of the valued garment. Were this individualism carried out, instead of the mere following of the prevailing fashion at the time, we should find ancient styles made modern again, even to the clipping Yew and Box into swans and peacocks; we should find flowers in many different arrangements most common at one place, and trees and shrubs the chief peculiarity in another pleasure ground; and when one neighbour visited another there would be something more exciting in this department than merely comparing Calceolarias and Scarlet Geraniums with those he had at home.

These ideas, and others of a kindred character, swept through our mind as, in company with Mr. McNeill, we entered and traversed the small pleasure ground of Mr. Wilkie which we noticed in passing the other week. Perhaps a great part of the charm was in finding something so unique and different from what we might have been led to expect. For much personal kindness we are indebted to Mr. Robertson, of the firm of Dickson, Hogg, & Robertson, the eminent seedsmen of Mary Street, Dublin; and if these gossipping articles convey only a small portion of the pleasure to the readers that we have experienced in writing them, then these readers too are indebted to that gentleman for furnishing us with instructions so as to enable us to see not a tithe of what was worth seeing, but as much as we could manage in our limited time. Well, on our card was written, "Don't miss seeing Mr. Wilkie's." And on the way from the regal lodges, with their great ranges of glass, their fine crops of fruit, their fine specimens of plants in pots, and their myriads of bedding plants, we could not help wondering if we were going to examine some smaller, but similar edition at least, of ornamental gardening: therefore the surprise was all the more delightful on finding that there was no glass with the exception of that in the cottage windows—hardly any softwooded flowering plants at all—few even of gay-flowering shrubs, with the exception of Roses, Jasmines, and Honeysuckles on the walls of the house, Clematis flaunting from rustic columns, and Lilacs and mock Oranges, &c., in the boundary shrubberies; but that the great attraction was a collection of some of the most showy exotic trees and shrubs that would flourish in the climate, and arranged in the most tasteful manner without any attempt at classification.

Now, mark the propriety of such a decision. If Mr. Wilkie had set apart a good portion of his lawn for flower-beds, merely to be in the fashion, he might have excelled here too, as we tell some people with little gardens, that if they have a single flower-bed better than any one of ours, they just beat us in flower gardening. But, then, in massiveness of display Mr. Wilkie could not hope to equal his neighbours; but now they come to him to admire a distinct form of the beautiful which they themselves do not possess. Again, with such flower-beds, there would be no end of trouble, in getting plants, and saving plants, whilst these beautiful trees when once properly planted, can take care of themselves, and every month and every year will be increasing in their attractiveness once more. These trees from their exotic character not only constitute a distinct feature, when contrasted with the great Park, but they are peculiarly appropriate in the little lawn of the Superintendent, not only for gratifying his own taste and enthusiasm, but for showing to his neighbours and those who are now the representatives of royalty how that splendid Park can be made even still more interesting.

We have noticed the taste displayed in this little lawn. This depends greatly on the diversity of the arrangements. We wish we had obtained the exact size of the garden; but it is made by a little intricacy to look much larger than it is. The widest part is just as you enter the gate close to the cottage, where a fine Wellingtonia meets the eye. Beyond the cottage a winding walk with shrubs on one side encircles the lawn; the lawn being kept in the middle, but separated from the walks by raised banks, which advance and retire, so as to prevent you seeing much of the lawn at one time, and at each turn presenting you with a fresh view. On this lawn many of the finest plants are growing in the gardenesque style, with their lower branches sweeping the grass. On the raised banks they are allowed both deciduous and evergreen to blend in the picturesque style. You turn this corner and then another, and you are presented with fine specimens of the wild picturesque, in the shape of lofty stumps of the boles of trees, with the Glycine flaunting from the top of one, and the Clematis with [illegible] almond-scented flowers dangling from another, whilst close [illegible] base you may find a basket made of tree roots [illegible] decorated with Ferns and alpine

Look into this bend and that nook and you will get a dash of the romantic, in a rockery and fernery, with a great variety of foliage for background, and lighted up with plants on the crest of the white-flowering Clematis and the elegant Pampas. Some of which on the lawn last season had a forest of flower-stems averaging 12 feet in height, and which have suffered little or nothing, whilst ours were next to destroyed last winter. Is there nothing of the simple, almost naturally artistic? Aye, that there is, in some fine tazzas near the cottage, which seemed to be 6 feet of the root-end of a large tree above the ground, and supporting a huge protuberant root. All hollow some 12 feet or 15 feet in diameter, with rings of Ivy and Clematis fringing the edges, and the interior parts devoted to flowers, which tazza just wanted more breadth at the base to make it elegant indeed. "Nothing more purely artistic?" Well, yes there was, not in the shape of some Tuscan vases near the door, not in the appearance of a couple of Phœnixes, cut out of Box or Yew, which we would have admired; but in the appearance of sundry wire stands—very nice for those who like them, and with a trim little cage for each separate red pot with its flowering plant to stand in; but we shall say nothing about them, further than that the boisterous wind, that then became very squally, turned almost every stand topsy-turvey, and sent the pots and the plants in them sprawling in different directions, and we were not at all sorry to witness the catastrophe. Reader, if with all your moralising you have ever experienced a singular feeling, we leave you to say what, on detecting some slight flaw or speck on a work of great beauty, then we feel you will forgive us.

We do not recollect noticing a single plant that bore the marks of being injured last season, except an elegant specimen of the Abies morinda, all the rest were green and flourishing, and more distinguished for that and massiveness of growth, than for their mere height. We have already noticed the Wellingtonia, an elegant plant, 9 feet 3 inches in height, and 7 feet 9 inches in diameter of head at the base. Taking that width as a means of measuring the width of others, we will subjoin a few of the most striking specimens on the lawn, merely mentioning their height:

Abies cephalonica, 24 ft. high
A. Douglasi, 26 ft. high
2 Cedrus deodara, 24 ft. high
C. atlantica viridis, 18 ft. high
Cryptomeria japonica, fine
Cupressus elegans, fine
C. funebris, 12 ft. high
C. Goveniana, 15 ft. high
2 very fine C. Lambertiana, 22 ft.
Ditto C. macrocarpa, 17 ft. high
Ditto C. torulosa, 17 ft. high
Ditto C. sempervirens, 20 ft. high
Juniperus excelsa, 13 ft. high
J. recurva densa, 17 ft. high
J. pendula, 10 ft. high.
Libocedrus chilensis, 8 ft. high
Picea nobilis, 11 ft. high
P. pinsapo, 13 ft. high
P. Nordmanniana, compact plant
P. Webbiana, 11 ft. high
Pinus cembra, 11 ft. high
P. excelsa, 15 ft. high
P. insignis, 17 ft. high
P. taurica, 15 ft. high

This last Mr. Wilkie deems quite true, and it is a beautiful compact specimen, somewhat resembling a very close stunted specimen of Pinus austriaca. On the lawn is also a fine Weeping Ash some 12 feet in height, the branches sweeping the grass, and leaving a cool retreat inside of 24 feet in diameter.

On the banks in the mixed style were fine plants of Ailanthus glandulosus, used for feeding silkworms in France—

Acer colchicum, 17 ft. high
Berberis Darwini, 10 ft. high
B. japonica, fine
Cephalotaxus Fortuni fœmina, 8 ft. high
C. Fortuni mascula, 8 ft. high
Cupressus Bedfordiana, 6 ft. high
C. mexicana, 15 ft. high
Ilex latifolia, 9 ft. high
I. nigrescens, 18 ft. high
I. pendula, 7 ft. high
Juniperus oxycedrus, 8 ft. high
Paulownia imperialis, 16 ft. high. (In flower-bud, but has not flowered.)
Quercus pendula, 21 ft. high
Salisburia adiantifolia, 8 ft. high
Pyrus sorbus vittatus (or something like that; a fine-foliaged sort from the Himalayas).
Taxus japonicus, 4 ft. high, fine
Tilia europæa grandifolia (a fine-leaved Lime, synonymous, we presume with platyphylla).
Larix dahurica, 7 ft. high

and fine plants of the Ulmus montana pendula, or Drooping Weeping Elm, which would look handsome on large lawns.

These are only a few of the many objects of interest. There are a great number of small shrubs, alpine plants, and Ferns, some of the rarest of which we were to have a list of, but we presume they will now be left for another visit.

There is one more interesting feature in what may be termed commemorative or monumental plants, such as a nice plant of the Picea Nordmanniana planted by the sons of Robert Burns, the Scottish poet; a plant of the Thujopsis borealis, 6 feet high, planted by General Lord Seaton, in 1860; Thuja gigantea, a beautiful plant 7½ feet in height, planted by the Earl of Carlisle in 185[illegible] Thujopsis borealis, 6 feet high, planted by the late Count [illegible] of Eglinton, 1859; a Wellingtonia gigantea, 6½ feet, planted by the late Earl of Eglinton, in 1859, &c.

[illegible] in these latter [illegible] these pretty plants should soon be monumental. It is sad, sad, when the ennobled by Nature, as well as ennobled by birth, noble in action, noble in effort to leave a world better than they found it, are thus taken suddenly away in the vigour of their strength, and the full flowing tide of their usefulness. Would that we could all live so as to be really missed when gone.

But we must stop. Going from such trees commemorative, we might pass on to consider them in their grandeur, as suggestive of studies in history and geography, until we could almost fancy we had crossed the Pyrenees, climbed the sides of the Andes, and trod the snows of the Himalayas; but we have said quite enough, without telling many amateurs the course which we must follow, to lead them to see even from this one example of a little lawn, that there are many modes by which they may cluster vegetable beauties around their homes, without slavishly following what may just then be all the fashion. R. FISH.

ERRATA.—Page 151, 2nd col, fourth line from bottom of last paragraph on pits, &c., the word "surface" should be "furnace." At page 150, 151, *fig.* 3 and 4, just suppose that bricks are left jutting out in the side walls for platform, as No. 1.

THE IN-DOOR PLANT CASE.—No. 3.

(*Continued from page* 147.)

I WILL now proceed to give a few details, of ways which I have found useful of growing plants and forcing flowers in these small glass houses.

The arrangements I have found most successful have been elsewhere described; the actual culture, therefore, is the point I have now to mention more particularly. The objects of the cases vary of course with the different plants grown in them: warmth with some, moisture with others, protection simply from dust and smoke with others; and, perhaps, with all, the great advantage of a screen from dry air, gas, east winds, and a smoky fog.

It is thus that for stove plants; for raising seeds and cuttings; for growing on in summer the flowers that thus are raised; for growing bulbs in the greatest perfection possible, and for flowering them in a way that it is rare to see surpassed as to size and duration; these cases act in the most diverse manners.

This chapter I propose to devote to bulbs, as they are at present claiming so much attention.

We will now, therefore, proceed to fit up a four-foot case with a grand winter garden; and, as to time of flowering, if my directions are carried out on the 1st of September they afford every hope of a splendid display at Christmas; while a month later would probably produce a still finer show in January, the very early flowers being seldom the best grown.

For a late succession, perhaps in March or April, the bulbs require potting in the driest sand, keeping in a place that is perfectly cool and dry—entirely in the dark; and, after careful watching all through the earlier months; (since if bulbs will grow nothing but mischief is to be done by stopping them); they take their turn exactly like the others about December, or early in January. These hints though not belonging expressly to plant cases are most necessary, notwithstanding; as nothing is more hopeless than an attempt at growing ill-conditioned bulbs under glass at all. The bulbs being then provided in a healthy state, the tops not shooting out before the roots; the pots to contain them should be filled to a third of their depth with broken charcoal, the hole below being covered with a zinc cap or an oyster-shell. The soil (just good common loam mixed with a little sand) should be put in lightly, nearly to the top; three bulbs then being taken of each selected sort, they should be so arranged on the surface as neither to touch each other nor yet the flower-pot, the bulbs just resting on the slightly-moistened mould—it must not be wet; and, then dry sand being poured in round the bulb, the soil is filled in lightly to the top, as high at least, as soil ever should be filled—that is, at least to a half-inch below the rim.

The great object is now to keep the bulbs dark; but they must not at the same time be damped. I have heard people recommend turning flower-pots upside down upon them, and stopping up the holes; but that, I own, seemed to me a very damp-trap. Many persons place them, as I do myself, in a dry cellar (guarding them well from mice which nibble off the roots), and others again passing through town, or at home for a few days early in the autumn, plant a case entirely; and, having placed it in a quite dark room, or covered it up with a thick cover through which no light can penetrate, they leave it quite to its own devices till six weeks later they come back and find white little points appearing. This is a very easy and effectual mode of setting to work at first. The box should then be filled with white sand to an inch above the hot-water tank, and the whole set of pots or dishes, glasses, or bowls, should be placed thereon. The top and slide glasses should be taken out; and, if the room is not dark, a cover put over it of sufficient thickness to exclude the light entirely.

It should be always remembered that a little light is the most dangerous things for plants; where light is excluded there should be total darkness. A glimmer of sunshine through a chink in a window shutter makes most woeful havoc.

The pots being then duly planted, whether with Hyacinths, Tulips, Scillas, Snowdrops, Narcissi, or Jonquils, the case being left open and all in darkness; in from four to six weeks it will be time for a new arrangement.

The full bright light being admitted gradually at first, the sand in which the pots stand may be a little watered. I have a favourite mode of watering the sand by means of an inverted flower-pot, through the hole of which the water is poured down to the bottom of the case to be sucked up gradually. After the first day or two, however, the sand may be kept quite wet.

If the weather is damp or foggy it is sometimes desirable even in November to give a little heat, just to make the air circulate freely instead of hanging in a stagnant manner round the growing plants. The heat should in these instances be always given in the lightest time of the day; and both the front and top, at any rate the former, should always be then kept out. Indeed, even as a general rule, if a case stands near a window, I think, while bulbs are growing, the side is as well kept out.

It should always be considered that good roots are the first essential for obtaining fine flowers; and if the roots are deficient the flower will most likely be weak and lanky, the bulbs going all to leaf. Darkness especially, or too much warmth, is apt to end in this way.

The less heat then the better till the flower-buds are fairly developed. After that a case nearly closed, and a soft moist air, produce flowers far better opened and in more dewy freshness, than any that I remember to have elsewhere seen.

The heat should not, however, be given except in daylight. The flowers should be kept a full inch from the glass; and a vigilant watch should be kept in order to remove any falling leaf, or any decaying petal, when the blossoms open. There is one special thing to remark also in the care of these cases—that any vegetable substance not in active growth not only decays itself but speedily infects everything that it touches. I have known a Primrose blossom falling on a branch of Begonia cause the whole spray to decay entirely. A single Myrtle leaf even, will do a great deal of mischief. But these things only require watchfulness: five minutes' attention daily is enough for the avoidance of all such disasters, and it is not less conducive to fresh and brilliant beauty than it is to health.

I consider four or at most five pots of Hyacinths or Tulips amply sufficient for such a case at one time. A few little groups of Scillas and of Snowdrops may also be most favourably introduced amongst them: these will grow beautifully in between the pots, just dropped into the moist sand. During the whole time the more air that can be given at one side only, the better for the plants. During the very few last days when they are forcing hard, 75° to 80° is not too great a heat, provided always both sand and air are moist, and that the plants are in full light. After the blossom is once open I have found a drier atmosphere, a very much cooler temperature, and a raised top, the best conditions for preserving flowers.

It has been already remarked that no flower must ever touch the glass; its own evaporation, with the condensation, destroys it at once. Even the leaves are better warded off. In some instances I have even found sad injury to arise from using gathered moss for covering the pots. Healthy growing moss, such as Lycopodium denticulatum, answers far better for making the surface green, without doing any injury to the other plants and flowers.—E. A. M.

CUTTING DOWN VINES IN POTS—HEAT THEY REQUIRE.

I HAVE purchased a quantity of Vines in pots, they are from 10 feet to 14 feet long. Should I prune them down to a certain length, or let them fruit as they are? I should also feel obliged by your stating what héat they will require (they are Black Hamburghs).—NEMO.

[Your Vines in pots being from 10 feet to 14 feet long, you should have said whether they had made this year's shoots the entire length, or have they borne a crop of fruit and have lateral shoots or spurs. The first state is the best, and we will suppose that is the state of yours. Then, again, you should have stated the strength they have attained to; we must, therefore, guess at that also. Vines are not certain to show bunches unless they are pretty nearly as thick as a man's little finger, and the wood should be well ripened a good brown colour, with every bud visible and prominent.

If your Vines are in such a state, then you should cut off only about one-fourth of their length, but if the upper part is not quite ripe, and the wood solid and with very much pith visible, then cut off one-third of their length. Prune them immediately, and do not begin to force them for at least a month after you have pruned them. Six weeks would be better, because if cut and put into heat immediately they would certainly bleed at the top. Begin with a heat of not exceeding 45° the first fortnight, and increase 5° every fortnight till you reach 65° by night, and 70° by day. This gradual increase of heat will cause every bud to break on the last year's shoots. If, however, the buds on the lower parts of the shoots do not break or show signs of pushing, then bend the shoots backwards in a bow-like manner. Indeed, many growers adopt that precaution always which is a practice that it is wise to follow. It checks the sap from rushing in such force to the highest buds. Keep your Vines syringed at least every other day, and also keep a moist atmosphere up internally. It encourages the buds to break kindly. As soon as the bunches are fairly visible stop each lateral one joint above the bunch, and all that are barren—that is, if any do not show a bunch rub them off entirely. You will thereby throw all the strength of the Vines into the fruitful branches. Should you be so unfortunate as to miss having any bunches show on any of your Vines then stop every lateral excepting one near the base of the shoot. Train that up, and when it has attained leaves and a shoot 2 feet or 3 feet long then cut all the rest away and encourage that shoot to make a good one, by giving manure water occasionally to strengthen it. It should make you a good, strong Vine for the following season. Let us hope, however, that every Vine will bea[illegible]

[illegible]

[illegible] exhibition t[illegible] exc[illegible] rule [illegible] meetings, although Mr. B[illegible] Chrysanth[illegible] [illegible], has sent us his notes, and [illegible]ng the compan[illegible] [illegible]adies, bot[illegible] [illegible]derly an[illegible] [illegible] the pointe[illegible] [illegible] inches hi[illegible] [illegible] brin[illegible] [illegible]

WHY THE COLLAR SHOULD NOT BE BELOW THE SURFACE.

BUDDING APPLE TREES—PROPAGATING VERBENAS.

EVERY book on gardening that I have read warns one against placing the collar of the tree in planting below the surface of the soil, but none of them has informed me of the reason of this. Is it that the bark which has been above the soil is injured by the wet when placed below it?

Failing this spring in grafting some Paradise stocks, I tried budding them, and the buds have taken, will the shoots from these at the end of next year be as vigorous as those from grafts inserted next spring? It is not usual to bud Apples.

Tell me the essentials in propagating Verbenas. For several years I have lost three-fourths of my stock in winter, but fancy that I have ascertained thus much, that the slips should be from short-jointed shoots, be struck in a cold frame, and in winter kept, if possible, without fire heat.—WYE-SIDE.

[The collar of a tree is that part of a plant whence the root descends into the earth, and the plumule or stem mounts upwards. As Nature points out the practice, we must have strong reasons why we should act quite differently. Many forest trees are thus injured because the roots are placed deeper than they ought to have been, and raising the earth against the stems of trees not only impairs their beauty, but often kills them outright. Some trees so deeply planted will send out roots from the buried stem; but in the case of fruit trees, that is often attended with prejudicial results. It is generally better to have only one set of roots. If you consider that most gardeners would prefer a young Vine raised from an eye or bud, to one raised from a layer, you may see a reason why stems should not be buried. This subject will come in our way ere long. If the tree is an ornamental one, there will generally be a swelling at the collar, which forms, as it were, a base to the column or bole, and deep planting destroys that, and thus deprives the tree of a base to stand upon.

Many propagators prefer budding to grafting, though in low dwarfs there is not much gained in time.

Another cause of success in striking Verbena cuttings, besides those you name, is having the cuttings struck in time, so as to be hardened off before winter, then they will keep well in cold pits. But in severe weather a little fire heat will be a help in keeping off mildew, &c.—R. F.]

POTTING VINES AND THEIR CULTURE.

I HAVE about a dozen pot Vines, which are now in the pots they have made their season's growth in, and have just shed their leaves. I want to begin forcing these Vines early in January. I have a trough prepared for them in which I purpose fruiting them.

I have pruned them as required. When ought I to plant them in the trough, and what compost would you recommend?

I have thought of putting them into fifteen-inch crinoline (wire) pots, 15 inches in diameter, and deep, so as to enable them easily to strike root into the soil around them; and at the same time in the autumn by pruning all the roots which appear outside the pots to remove the ball of roots intact, and give them a season's rest and again to fruit them. I have also some pot Vines I want to repot to make another season's growth before fruiting. When should this be done?—GREYFRIARS.

[The Vine, like every other fruit tree, is injured by the rust of iron: therefore, we cannot recommend you to adopt crinoline-wire pots to put your fruiting Vines into previous to plunging them into your trough or narrow border. No doubt if you lift out again with a ball of roots they would push stronger than if they were lifted and potted without any ball. You had better, if you will go to that trouble, order some potter near you to make you some pots from 12 inches to 14 inches diameter, with holes at the sides; or, what is better still, with slits at the sides. Such are used by some Orchid growers. After they have fruited you may lift them, repot them, cut them down, and train one shoot during the following year to fruit the year after. Vines in pots seldom do any good for fruiting after the first year's crop unless they are cut down and have a year's rest to grow a single rod to fruit the second year.

After you have potted your Vines in such pots you may plunge them as soon as you like in your narrow border, which is [illegible] [illegible] enough to hold the pots and a little more. The compost to fill under, around, and above these pots should consist of year-old turf, well chopped, three parts, rotten dung one part, and as much of rotten leaves if you can get them, adding about one-eighth of small pieces of charcoal. The whole well mixed together but not sifted, a layer, 2 inches thick, of broken bricks or broken garden pots should be placed at the bottom of the trough to carry off the superfluous water. As you have pruned the Vines you may start forcing in January; by that time there will be no danger of your Vines bleeding. As you have a dozen Vines ready to fruit in pots in the trough or border, would it not be as well if you were to commence first with half the number, and the other half a month afterwards, you would then have a succession of Grapes, and the second batch would stand a better chance of doing well because then the days will be lengthening and the natural heat increasing?

The Vines you allude to that you wish to grow this next season to make fruiting plants the following season, are, it must be presumed, year-old plants. Pot them in large pots directly in rich compost—viz., turfy loam, rotten dung, and leaf mould; place them in a house where no frost can reach them, cut them down to three eyes, and here they will soon begin to push new roots, and thus gain strength to push forth strongly in about the middle of January, when they should have a gentle heat given to them, and be grown on through the spring months. By thus starting them early you will be enabled to ripen their wood early, and so have a more certain prospect of obtaining a crop from them the following season. See answer to "Nemo" to-day for further information.]

CEMENT FOR POTS—BOXES FOR CUTTINGS.

I am growing some Cinerarias, in a sitting-room, on the plan recommended lately in The Journal of Horticulture, of placing one pot within the other, and cementing them together at the top, and I should be glad if you could inform me what is the best kind of cement to use for the purpose. I do not like either of those suggested by Mr. Beaton—putty or grafting-clay —I am about trying the red cement used by philosophical instrument makers. This is very easily made—four parts of resin and one of beeswax, melted in an oven or by the fire in any earthen vessel not liable to crack with the heat; when thoroughly melted another part of venetian red is carefully and gradually stirred in; it may then be poured upon a dish, on which a little grease has been rubbed, and as it cools cut up into sticks. This is always ready for use, as it simply requires melting by a candle, and applying like sealing-wax; this does very well now, but how will it bear the heat of a midsummer sun in a greenhouse? I have my fears of its melting under this ordeal and quietly letting the inner pot sink to the bottom of the outer one. If this fails how will Roman cement do? Will it be so adhesive that the pots will most likely be broken in separating them? Or, will mixing an equal quantity of finely powdered brick, so as to make the cement resemble in colour the pots, prevent its causing them to adhere so strongly as to be broken in separating them? If Roman cement is approved of, how should it be mixed and applied, as I doubt not many will be trying a plan recommended by such an authority as Mr. Beaton? I think information on this point will be acceptable and useful to many of your readers.

What do you think of the following modification which has suggested itself to me of the "tops and stops" for striking cuttings, recommended by Mr. Beaton in your Journal of October 1st?—

Instead of pots, I get from the grocer raisin or currant-boxes, about 20 inches long, by 8 inches wide and 7 inches deep. Box No. 1 contains the cuttings; box No. 2 has the bottom knocked out, and is inverted on No. 1; the place where the bottom has been is occupied by two or more squares of glass; the sides of the upper box afford shade, the glasses can be moved so as to give air, as the cuttings are able to bear it until they are removed altogether, and at last, the upper box also. In the case of flower-pots, something like the circular drums or boxes containing Figs, without tops or bottoms (the latter being supplied with a moveable square of glass) would answer the same purpose. I imagine such cylinders of wood could be supplied for a small sum per dozen, and if the pieces of glass to cover them were cut in a hexagon or octagon form, they would occupy no more space than bell-glasses, would be twice as durable, and, I should think, half the price. A word to the wise is enough; and I shall hope to see some of your commercial readers taking up the idea and advertising some such contrivances, in sets of a dozen, of different sizes, fitting into one another, with the glass coverings packed by themselves; they would occupy very little space, and, I should think, might be supplied at 5*s.* to 10*s.* per dozen, according to the size, with profit to the vendor. Cuttings thus protected, and especially double potted, as recommended, might be placed amongst plants requiring abundance of air, no small advantage where room is scarce.—Country Curate.

[Wood, in any shape, is not fit for putting cuttings in, as in pots and pans, save in the height of summer, or for the convenience of keeping so many common things in winter. The best contrivance of the kind is that by Mr. Walton, to supplement his case—that is, a "cold box" or a packing-case, deep enough to hold all the sizes of propagating-pots, long enough for what is to be done, and not wider across the mouth than a piece of sheet glass can cover across. That is a regular omnibus for seedlings in spring, and for cuttings during seven or eight months in the year. I described my own cold case, and how I did it, two or three years back.

There is no cement of any kind that is one-tenth so good for my plan of double potting as a raw piece of a clay clod. That is just what I use myself, and I would challenge the whole range of the sciences to produce a composition more effectual, or one-half so good or so cheap. My double pots and saucers are as free as my tea and coffee cups, and are just as freely changed or "put by" or brought out, and arranged or re-arranged as often and as quickly the one as the other. I suggested grafting-clay, instead of the natural lump (from which I supply myself, as giving some degree of trouble, or common putty, as costing something, because few care for things which cost nothing).—D. Beaton.]

PLANTING VINES IN POTS AND OUTSIDE BORDERS.

Having lately purchased some Vines, strong canes, capable of bearing fruit next year, I should be much obliged for directions as to their culture in pots, grown exclusively in pots, not as for orchard-house culture, where the roots are allowed to grow through and outside the pots. What sized pots should they be grown in, and what compost? When should they be transplanted into these fruiting-pots? What after-culture will they require? My object in growing them in pots is, that I have just erected a large vinery, and the Vines intended for it are to be planted in a border outside of the house, and as they will, of course, not come into bearing for some time, I wish to take what advantage I can of the house, and have a crop of Grapes from Vines in pots, which pots will be placed on the stage round the house. I do not wish to spare the Vines, and as they are very strong canes 8 feet at least in length, I hope to get from six to 7 bunches from each next year. What time is the best in this locality (county Waterford) for planting permanent Vines in an outside border which faces south-east, and well sheltered from north winds?—M. C.

[For reasons often given, we would not advise you to shift or do anything with your Vines in pots now, if the pots are of any size—say from 12 inches to 16 inches diameter, which we presume they are, since the canes are so good. Had it been July it might have been different. You may scrape off a little of the surface soil, and replace it with the richest you can obtain.

The Vines will show as well in smallish pots as in large ones, but unless you attend to them well in watering, they will not swell so well. Unless you had a particular reason for growing the Vines on the bare stage, we would either set them upon earth, or half plunge them into other pots supplied with soil, and thus you would lessen labour, and render the Vines more independent of any omission on your part. Of course, such Vines with roots in the second pots likewise must not be shown as Vines in pots.

You would gain nothing now by planting your Vines out of doors before March or April. If you had a house at work, you may start them inside, and plant out in May, and thus gain time.]

Large Produce of Potatoes.—From a piece of old garden gravelly soil 3¼ roods (or 64 yards square), the yield of Potatoes planted in rows 3 feet apart was (from 56 lbs.) 1025 lbs., all good sized sound Potatoes, and very few diseased.—BICTON, *near Shrewsbury.*

THE GARDENS AND CONSERVATORIES AT DANGSTEIN.

AMID the beautiful and romantic scenery of western Sussex lies Dangstein, the residence of Reginald Henry Nevill, Esq., and Lady Dorothy Nevill. The mansion, a noble specimen of Grecian architecture, is situated on an eminence near the boundary of a small but well-wooded demesne, and from it may be obtained extensive and picturesque views of that justly celebrated range of hills known as "The South Downs." To the east and south-east the eye wanders over a wide and extensive district of undulating land in the direction of Midhurst and Petworth, interspersed here and there with rich woodland scenery, the view in that direction being terminated by "The Downs," in the vicinity of Brighton and Worthing. Following the chain of hills westward, we notice Charlton Forest and Duncton, near which an observatory, on the estate of the Bishop of Oxford, at Lavington, forms a pleasing object in the distant landscape.

We next notice "The Downs" in the neighbourhood of Goodwood, the seat of his Grace the Duke of Richmond, while more immediately in our front the hills rise in proud grandeur, forming, as it were, part of a vast amphitheatre; the view being terminated in the extreme west by the Hampshire hills in the neighbourhood of Petersfield, from which place Dangstein is situated about five miles.

From the summit of the mansion the view is indeed grand, embracing as it does the Hampshire hills to the west, while to the north those of Surrey are faintly visible in the distance; eastward, and almost, as it were, immediately beneath us, stretches that fertile valley known as the "The Weald of Sussex."

This portion of the county which at some remote period was doubtless a vast forest, commences near the borders of Hampshire in that beautiful and romantic glen called Harting Comb, and terminates at the east of the county near Hastings. This lovely valley (till lately a waste, but now enclosed), is a spot worthy alike of poet or painter's praise. It is often spoken of by the renowned Gilbert White in his "Natural History of Selbourne," and contains many rare plants of great interest to the botanist.

The view to the south and south-east extends over a vast area of the fair county of Sussex; and where now stands the peaceful mansion of one of the descendants of the mighty Warwick, would in olden times have been a fitting spot for one of the feudal castles of that renowned baron.

But as it is our intention in the present instance to notice, however imperfectly, the gardens and conservatories at Dangstein, we will leave for awhile the mansion and the delightful scenery by which it is surrounded, and at once proceed to them. Taking our route by a broad terrace walk leading eastward from the mansion, through a portion of the pleasure grounds on our way to the old kitchen garden. This portion of the kitchen gardens, which is about one acre in extent, is bounded on the north by a range of vineries, Peach-houses, and an East Indian Orchid-house, the whole forming a frontage 200 feet in length. A Fig-case 37 feet long occupies a portion of the east wall of the garden. The walls are well filled with healthy fruit trees, and the quarters or divisions of the garden are occupied principally with the choicest sorts of vegetables.

On entering the Orchid-house, which is filled for the most part with East Indian epiphytes, the lover of the rare and gorgeous lora of the east will pause to admire the beautiful and curious productions of Nature here collected together. Amongst ther rare and valuable specimens of this charming tribe of plants we noticed fine examples of Vanda suavis and tricolor, from 3 feet to 4 feet in height, and loaded with flower, Vanda suavis being unusually fine. Saccolabium retusum, præmorsum, Blumei, and guttatum. Ærides Larpentæ, with six spikes of flower; Fieldingii, or fox's-brush, the spikes of which were early 3 feet in length; odoratum majus, and Brookii, in fine flower. The rare and curiously beautiful Cypripedium caudatum [illegible]m, and hirsutissimum, both finely in flower. A noble specimen of C[illegible] cristata, measuring more than 4 feet round [illegible] of bloom; and an equally fine or[illegible] [illegible]

We also noticed fine specimens of Vanda cœrulea Batemanni and gigantea (the latter very rare); Angræcum caudatum, eburneum, and virescens, in robust health; Dendrobium Dalhousianum, Farmeri, and others; Lælia superbiens and purpurata; a splendid specimen of a beautiful and rare Cattleya Aclandiæ, with three fine flowers; Cattleya crispa, lobata, and Pinelli, Sarcopodium Lobbii, Uropedium Lindeni, and others equally beautiful, but too numerous to mention. Hoyas and other climbing plants are trained to the roof. The back wall is covered with a fine plant of Vanilla lutescens, which has lately, through great skill and perseverance on the part of the cultivator, ripened several fine pods of fruit. We must not fail to add, that the whole are in a high state of perfection, and reflect great credit on their manager.

We next enter a vinery well stocked with healthy young Vines, the fruit of which at the period of our visit (early in May), was on the point of colouring. The sorts grown being Black Hamburgh, Frontignan, Dutch Sweetwater, and Chasselas Musqué. Figs are trained to the back wall of this house; and being planted in a well-prepared border they appear to be thriving admirably, although it is a well-known fact, that this fruit always attains a greater perfection when grown in a house expressly devoted to its culture. The next house we enter is filled with Black Hamburgh Grapes, of which there was an abundant crop; the foliage was in a fine healthy condition—a great desideratum in successful Vine-growing. Figs are cultivated in pots placed on a border in the centre of the house, the front benches being occupied with Dwarf Kidney Beans in pots. In the whole of the three vineries the shelves are well filled with Strawberries in a fine fruiting condition; the sorts grown being Keens' Seedling, Black Prince, and Ingram's Prince of Wales. Passing through the late vinery we reach the Peach-house, a commodious structure 28 feet long by 13 feet wide. Here the trees are in a healthy condition and well stocked with fruit. At the extremity of this house is a Peach-case 60 feet in length. The trees are trained to the wall, and the lights so constructed that they can be removed at pleasure. They afford admirable protection from the spring frosts, and serve materially to assist in ripening the wood in autumn—two very desirable objects in this changeable climate. At the back of the range of hothouses we have just passed through are the various sheds and storerooms—necessary appendages to a first-rate horticultural establishment.

Immediately facing these is a range of low span-roofed houses 102 feet in length, divided into four compartments. The first we enter is devoted to the culture of the commoner sorts of stove-flowering plants, consisting of Gardenias, Ixoras, Begonias, Rondeletias, Dipladenias, &c. After bestowing a glance on these we enter what is called "the tank-house." Here are cultivated many of the rare and curious productions of tropical and semi-tropical climes.

Amongst others, new and rare, we noticed Pothos argyrea trained to a wire trellis, the central portion of which was filled with rough pieces of peat and sphagnum moss, in which the plant had rooted freely—its beautifully variegated leaves may be almost said to vie in splendour with those gems of "the vegetable creation" the genus Anœctochilus, Sphærostema marmorata, and Allocasia metallica, both new and rare plants, the foliage of the former being of a bright silvery hue; a good specimen of the new and rare Cissus porphyrophyllus—this beautiful plant will certainly prove a very fitting companion for the Sphærostema, both of which are valuable additions to our stove climbing plants. We also noticed Plocostemon lasianthum, the flowers of which somewhat resemble the Hoyas. Here, also, were fine specimens of Gleichenia flabellata, microphylla, and dichotoma; Pleopeltis nigrescens; Neotopteris nidus (the Bird's-nest Fern); Marattia laxa; Olfersia cervina, and the delicately-beautiful Gleichenia hecistophylla, and other plants equally interesting and beautiful. We must not, however, forget to notice Tacca integrifolia, the curiously-formed flowers of which resemble a bat with its wings extended.

A tank occupies a portion of this division, in which are grown Nymphæas, Nelumbiums, and other aquatics. Around the sides of this tank is a choice collection of Lycopods, and Selaginellas, the delicate fronds of many drooping gracefully to the water's edge. Nearly all the varieties in cultivation are here collected together, including Lyalli, atro-viridis, Wallichi, Lobbii, rubricaulis, caulescens, and others; the rare Lycopodium laterale from New Zealand, L. phlegmaria, and a new species from Bo[illegible]o, intr[illegible] Messrs. [illegible] & Son, of the Clapton Nurseries, London.

Connected with the large tank is a smaller one, in which is grown the rare and curious Lace or Lattice Plant of Madagascar (*Ouvirandra fenestralis*), the beautiful net-like leaves of which float gracefully near the surface of the water. This is a plant which is said to have baffled the skill of many first-rate cultivators of plants, but the treatment it receives at Dangstein appears to answer admirably. As we before observed, it is grown in a small tank connected with, and supplied from the larger one; a waste-pipe carries off the superabundant water, by which means a continual circulation is obtained; the water is kept as nearly as possible at a temperature of from 75° to 80°. To all lovers of the curious and beautiful this plant must ever afford delight. Its introduction into this country is due to the perseverance and enthusiasm of the Rev. W. Ellis, a gentleman who has gained a worldwide celebrity for his researches and description of the natural history of Madagascar.

Immediately over these tanks are grown different species of Sarracenias placed on inverted pots close to the surface of the water. The collection consists of the following varieties:—Drummondi, flava, purpurea, rubra, and variolaris. They are all in an unusually fine condition, the leaves or pitchers of S. Drummondi and flava measuring more than 2 feet in length. We fear that justice is seldom done to these curious productions of Nature, but a personal inspection of those we saw at Dangstein would go far to prove what really beautiful objects they are when a proper amount of attention is paid to their cultivation. Here, also, are the beautiful little Cephalotus follicularis (the Australian Pitcher Plant), Drosera dichotoma, Nepenthes phyllamphora, lævis, and others.

The next division of this house is filled with Begonias and Caladiums, plants alike remarkable for the great beauty and diversity of their foliage. Of the former there is a good collection, whilst the latter contains most of the sorts in cultivation, including C. argyrites, argyrospilum, Brongniarti, Chantini, Heulletii, Wightii, Neumanii, and others. Amongst these are introduced some of the finer sorts of Marantas, including fasciata, regalis, rosea lineata, and Warczewiczi. A fine plant of Stephanotis floribunda was trained to the roof and showing an abundance of flower. The fourth and last division is occupied with some of the more choice and delicate sorts of Ferns, a portion being devoted to Gesneras, Gloxinias, &c. Amongst the different sorts of Ferns are good specimens of Pteris tricolor and argyrea, Cheilanthes, Nothochlænas, Gymnogrammas, &c., in great variety, and all in excellent health. Also, Adiantum cristatum, Lindsæa Lowi, and a beautiful specimen of the Silver Tree Fern of New Zealand (Cyathea dealbata). A small case occupies a portion of one of the sides of this division, in which were nice young specimens of Erionema marmorea, Campylobotrys argyroneura, and others. Leaving these houses and the beautiful and interesting objects they contain, we pass on to "the orchard-house," and tropical fruit-house, the two forming a frontage of 130 feet.

In the former, which is a lean-to structure 90 feet long by 12 feet wide, are well-trained trees of Peaches, Apricots, Plums, Nectarines, and Cherries, the whole, with the exception of the Peaches, well stocked with fruit. The trees are planted out in well-prepared borders, that system of culture being preferred to growth in pots. They certainly appear to thrive admirably, and we were informed that they annually produce good crops of fruit. Vines are trained to the roof, and from their present healthy appearance bid fair to produce a plentiful supply of fruit in the autumn. Leaving these we enter the tropical fruit-house, a span-roofed building 40 feet long, 24 feet wide, the height of the centre being about 12 feet. This house was erected expressly for the cultivation of some of the most esteemed fruits of tropical climes. It contains fine plants of Alphonso Mango, and Mangifera indica (Mango trees), the far-famed Mangosteen, Garcinia Mangostana, Blighia sapida, the Wampee Tree of China (Cookia punctata), Myristica sebifera and moschata (Nutmeg trees), Musa Cavendishi, and Castiglioni, Psidium Cattleyanum and pyriferum (red and yellow Guavas) loaded with fruit; Eugenia Jambos (the Rose Apple), in fine fruit; the Allspice (Pimento vulgaris), and many others. Here, also, are fine specimens of the much-esteemed Mandarin Orange. To the roof are trained different varieties of fruiting Passifloras, P. edulis producing a fine crop of fruit. At the west end of this house is a tank, over which are suspended some choice sorts of Ferns, including a remarkably fine specimen of the rare and curious Stag's-horn Fern (Platycerium grande), P. stemmaria and alcicorne, Hymenodium crinitum, and the rare and beautiful Drynaria quercifolia. In this house the plants are placed in sunken beds, hot-water pipes being conducted under the surface of the gravel on which the plants are placed.

Leaving this house we pass on through another portion of the gardens on our way to the Palm-house. This is a noble structure 80 feet long by 50 feet wide, the central portion being 30 feet in height. It is divided into four compartments, including the central division, with three wings attached. We enter at the west wing of the building, which is that portion devoted to the culture of some of the finer sorts of stove-flowering plants. Here are good specimens of Ixoras, Allamandas, Centradenias, Chloranthus inconspicuus, Euphorbias, Heliconias, Clerodendrons, and others, in fine flower; a noble specimen of the beautiful Hexacentris mysorensis, trained to a large globe trellis; a fine specimen of Franciscea latifolia, and others. Trained to the end wall is a fine plant of the Renanthera coccinea showing flower. Creepers are trained to the roof. Amongst others of great beauty we noticed the pale blue-flowering Thunbergia Harrisii, or laurifolia, and the curiously-flowering Aristolochia gigas, and Momordica mixta, the former stated to be becoming very rare in the country.—W. G. P. G.

(*To be continued.*)

PLANTS SLIGHTLY FROSTED.

On the morning of the 16th inst. we got up and looked out upon a frost 12° below freezing, the thermometer standing at 20°, and not a single fire had we put on the night before! We were not long in dressing, nor in getting to the fires. Had them all put on, then made a tour of inspection of the various houses: first the greenhouse conservatory. In the coldest end Primulas looking most disconsolate and covered over with white rime, leaves all stiff. Some Camellias white over. A pot of Mignonette the same. Chrysanthemums, the crimson bloom all powdered with rime. Next house: First vinery all right, greater body of air and a fire on the day before. Second vinery, not so right. Some bedding Geraniums near the glass, leaves all stiff, and powdered with rime. A north house, a sort of ommium gatherum of old Geraniums and the forcing stuff, all stiff with frost.

Well, here was a pretty mess. Instead of getting into a stew about it, and bruising the frosty leaves by covering up, we just fell back upon our usual method of getting the fires as brisk as possible, and raising the temperature, whilst the glass is covered by frost; considering the frost covering to be as effectual, if not much more so, than an extra mat covering when the sun has melted and cleared the glass. I am not going to be so foolish as to explain the reason of all this, but the fact is indisputable, for we have not an injured leaf.—N. H. P., *Nottinghamshire.*

THE OSAGE ORANGE.

This tree, or rather shrub, has long ceased to be regarded as of any worth as a fruit-bearing tree, and the only place I have ever seen it turned to a useful account is Fairlawn, a gentleman's seat in the west part of Kent, where it was planted out in considerable quantities as a hedge plant; and although it had hardly arrived at a size sufficient to stand as a fence against cattle when I saw it, without a little protection on the field side, its robust appearance and quick growth indicated that it would shortly take that position. The spirited owner, Mr. Ridgway, being sanguine that it would make a firm, useful, good hedge. And as a plant its shining green foliage looks well in summer, and being armed with thorns is better adapted to resist the nibbling attacks of cattle than most other plants, and a few years ago a neighbouring nurseryman offered it at a reasonable price for hedge purposes; but I have not seen it in use as such anywhere but at Fairlawn, where, also, many other experiments were being made with shrubs and trees generally esteemed tender. Indian Azaleas being planted out by scores, and were doing remarkably well, as were also some of the more choice kinds of Rhododendrons, and the most recently-introduced Conifers, but I never heard of the Osage Orange blooming there. Most likely when it does so it will be at the tips of the shoots of the preceding year, and then rarely ripen, and are cut back by the frost. Against a wall, however, in dry situations, it is not unlikely but it may have bloomed. If so, perhaps some one will be kind enough to describe it through the pages of The Journal of Horticulture.—J. Robson.

THE BOTANICAL FEATURES OF THE SIDES OF LOCH NESS.

By George Anderson, Esq., Inverness.

> "The Oak, the Ash, and the bonny Ivy tree,
> Ah, they flourish best in the north countrie."—Old Song.

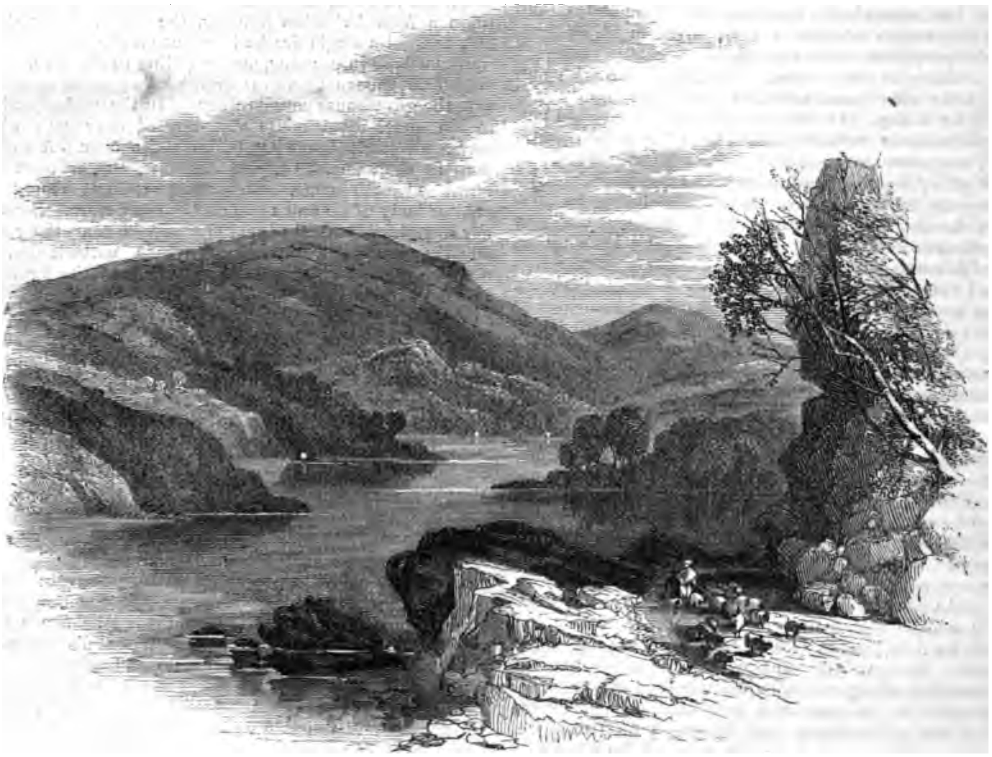
Of botany it has been justly said, that "the spleen is seldom felt where Flora reigns;" and although I cannot expect to add any inducements to its study, yet I will crave the indulgence of my readers while I offer a few observations, made several years ago, giving some faint idea of a district as richly decked with Nature's bounties as any in the British Isles.

We have been accustomed to think of the Highlands as the land of storms, of darkness, and of desolation; and when we have beheld the huge mountains rising in our way and crossing our path, as if forbidding approach to the retired habitations within their bosoms, we can scarcely believe that the rich descriptions of vegetable life, on the rocky bounds of Loch Katrine, so powerfully given by the bard of our times, can extend to the north of that celebrated inlet. Neither will our prepossessions, if taken from Dr. Johnson, be at all calculated to remove that dread of vegetable death, which the first sight of the cold Celtic hills is apt to impress on the traveller who journeys from the south. It is not to be denied that the character of our Caledonian mountains is, in general, that of bleakness and sterility, and it is rather to be wondered at, how, with this prevailing barrenness, spots should be found, and sunny braes and winding valleys should present themselves, clothed with the most enlivening and luxurious vegetation. As men, I believe we can easily understand why, to the lonely shepherd,

> "Dear must his cot be to which his soul conforms,
> And dear the hill that lifts him to the storms;"

but as naturalists, admitting the increased warmth of the sun's rays in deep sequestered glens, and fine-lying hillocks, it is still not so easy to account for the vast multiplicity of forms, and the beauty and closeness of the "bonny, wee, crimson-tipped flowers" that everywhere bedeck their surface.

Though torn by wintry rains, and stunted by early snows, I believe every one who has wandered among them, and contemplated the sweet-scented flowers of the wild Thyme and the waving Heather in its bloom, or followed with the enthusiasm that I have done, the haunts of the dun deer and the roe, will



LOCH NESS, FROM THE BLACK ROCK.

be tempted to apply to them, with but a small change of words, the expressions of the eastern poet—

> "Our rocks are rough, but smiling th[illegible]
> The Acacia waves her yellow [illegible]
> [illegible]onely and sweet, nor loved t[illegible]
> [illegible] blooming in a wilderness
>
> [illegible]nds are bare, but [illegible]
> [illegible]r-footed antelop[illegible]
> [illegible] and [illegible]ally sp[illegible]
> [illegible]

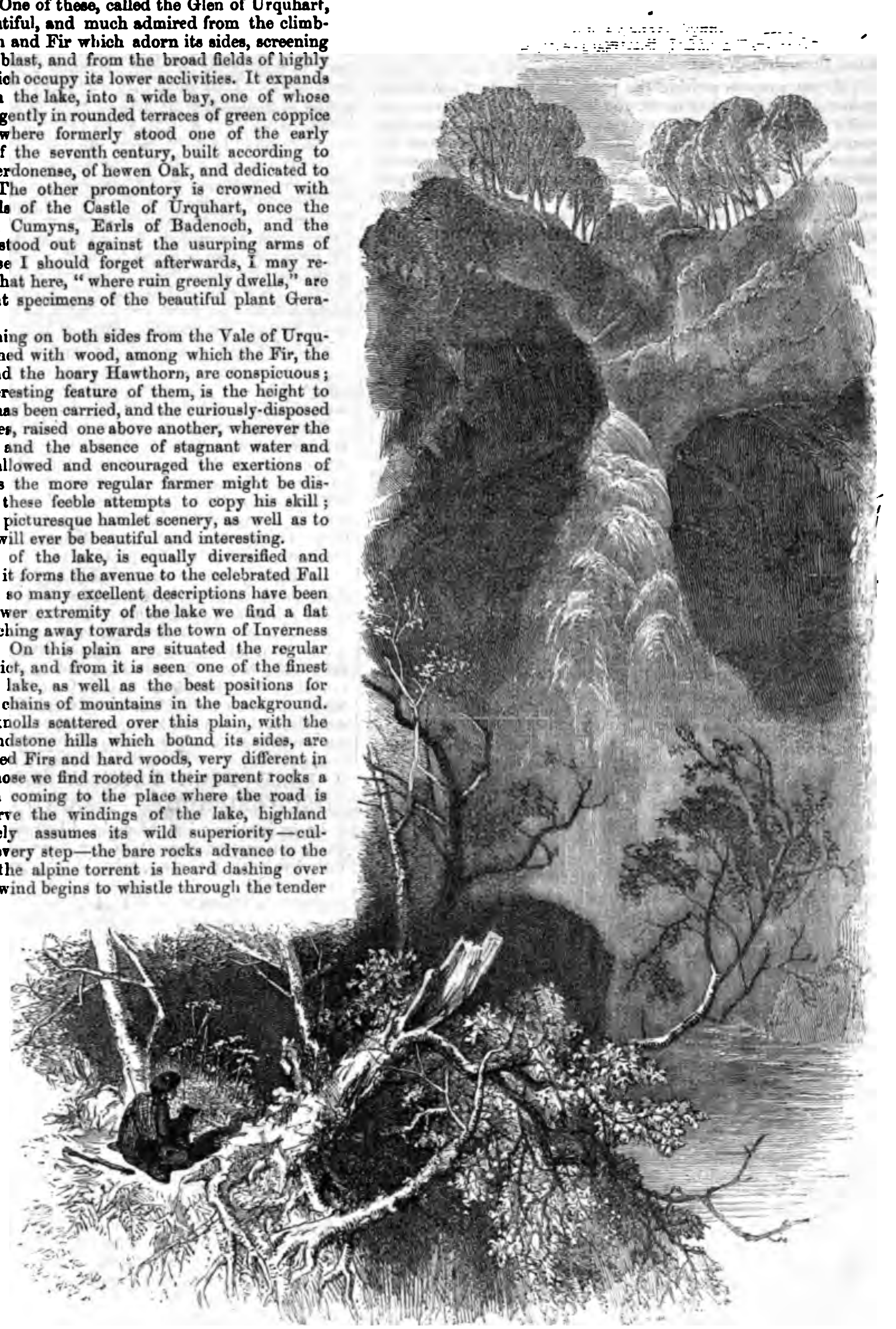
[illegible] generally acknowledg[illegible] [illegible]er and copious[illegible] [illegible]ants, to be met wit[illegible] [illegible]ds, have been proper[illegible] [illegible]ned and [illegible]s generally known t[illegible] [illegible]any of [illegible] counties, have been frequently found of tolerable size in many parts of the districts I allude to.

I must offer a general and short description of the face of the country. It is one of the very peculiar features of this part of the island that, similar to the extensive valley which cuts across our southern division, from the Firth of Forth to that of the Clyde, there is in the north an equally extensive one, less elevated, but more abundant in water, which connects, by its lakes and by the Caledonian Canal, the Atlantic Ocean with the German Sea, and which is well known under the name of the Great Glen of Scotland. Two-and-twenty miles of this natural opening are occupied by the deep waters of Loch Ness, and if the mountains which surround its margin are not so picturesque, towering, and rugged, as those of the west coast, they are still more varied in inclination and outline, more protected from the rage of the Atlantic storms, more exposed to the sun, and, therefore, more favourable to vegetation ee or four lateral valleys, all of them differing in botanical ters, according as they are wide or narrow, and transversed mooth-flowing stream or a foaming torrent, open them to the lake, and discharge their moisture into its ed waters. One of these, called the Glen of Urquhart, edingly beautiful, and much admired from the climb- ods of Birch and Fir which adorn its sides, screening the wintry blast, and from the broad fields of highly ted land which occupy its lower acclivities. It expands unction with the lake, into a wide bay, one of whose ntories rises gently in rounded terraces of green coppice orn land—where formerly stood one of the early a churches of the seventh century, built according to everium Aberdonense, of hewen Oak, and dedicated to abrutha. The other promontory is crowned with nerable walls of the Castle of Urquhart, once the f the proud Cumyns, Earls of Badenoch, and the stle which stood out against the usurping arms of d I. In case I should forget afterwards, I may re- in passing, that here, "where ruin greenly dwells," are some elegant specimens of the beautiful plant Gera- ucidum.

hills, stretching on both sides from the Vale of Urqu- re well clothed with wood, among which the Fir, the ng Birch, and the hoary Hawthorn, are conspicuous; e most interesting feature of them, is the height to cultivation has been carried, and the curiously-disposed s and terraces, raised one above another, wherever the of the hill, and the absence of stagnant water and vood, have allowed and encouraged the exertions of ry. Perhaps the more regular farmer might be dis- to smile at these feeble attempts to copy his skill; the lover of picturesque hamlet scenery, as well as to tanist, they will ever be beautiful and interesting.

south side of the lake, is equally diversified and tic; indeed, it forms the avenue to the celebrated Fall ers, of which so many excellent descriptions have been . At the lower extremity of the lake we find a flat l plain, stretching away towards the town of Inverness ort George. On this plain are situated the regular of the district, and from it is seen one of the finest ches to the lake, as well as the best positions for g the grand chains of mountains in the background. w waving knolls scattered over this plain, with the -flowing sandstone hills which bound its sides, are l with planted Firs and hard woods, very different in ance from those we find rooted in their parent rocks a ay on. On coming to the place where the road is ade to observe the windings of the lake, highland immediately assumes its wild superiority—cul- recedes at every step—the bare rocks advance to the the road—the alpine torrent is heard dashing over urface—the wind begins to whistle through the tender es of the — and the ashing its at our feet, erfully con- s that we fairly in d of the tain end

road, cut in laces, espe- the north ut of the ocks, winds eir jutting ls, over- with the g boughs Birch, or by the g arms and f the wild Oak, and thorn. The s of the hills above us are covered with thick woods of trees, intermingled with the Hazel; the abrupt crags wave with the stately foliage of the purple Foxglove; the intervening spaces of green sward are filled with twining branches of the white and red Dog Rose, in contrast with the yellow Honeysuckle. Here, then, the botanist should begin his researches.—(*Gardeners' Magazine of Botany*.)



LOCH NESS.

VINE ROOTS PROTRUDING FROM THE POTS.

I HAVE a dozen Black Hamburgh Vines in pots, three years old. When I purchased them in the autumn I placed them on some loose dung, and I find that the roots have grown through the pots into the dung. When I want to move them into the forcing-house, what had I better do with the roots that have come through?—VASTUS.

[If you propose putting the pots into a bed of fermenting material, or on a bed of earth, you had better lift the roots and plant them again. If you propose placing the pots on a shelf or stage, you could place the pots inside of a saucer, or even of a larger pot, and that being filled also with earth, you would minimise the trouble in attending to them. If you propose growing the Vines in these pots, and exhibiting them as Vines in pots, then you must cut these roots away and prevent any growing afterwards. There will be plenty of roots in the pots.]

TRAINING ON WALLS BY NAILS, AND SHREDS, AND OTHER MODES.

THE whole question, in answer to Mr. Starkie Baldwin, resolves itself into one of circumstance. In old walls that can hardly be made worse, the old custom of nailing may still be resorted to. Circumstances compel us to resort to this old-fashioned mode, but we use as few shreds as possible, as we do not think that either walls or trees are improved in appearance by being made to resemble a rag shop. Whenever a wall is fresh faced, fresh pointed, or a good new wall provided, we should decidedly in every case, either wire or stud. For Apples, Pears, and Cherries, the wires may be strained two bricks apart, and 2 inches from the wall. All the larger shoots we would fasten with rope-yarn. In nailing in the common way, we would use rope-yarn or willows, using thread in the one case, and small shreds in the other for points. For Apricots and Peaches, we would have the wire strained to studs only 1 inch from the wall. This would afford plenty of room for the tying, and yet permit of no great draught of air between the trees and the walls—in fact, the leaves at this distance, and the wood too, will receive a good amount of heat from the wall, and there will be no holes in the walls for harbouring woodlice and numberless other insects and their eggs. This plan we believe would in a few years be cheaper than nailing, and, ere long, we may so cultivate many trees, that there will not be so much pruning and laying-in, and fresh tying or nailing every winter. It is quite practicable even with Peaches and Morello Cherries, to do nearly all the pruning and tying in summer, and then future gardeners may escape the rheumatism and other pains to which most of us are subjected before we hardly pass middle age. This wiring is used greatly for conservatory walls, and it will be equally efficacious for fruit trees; but the tenderer the trees are, the nearer should the wires be to the wall, so that the string may just be slipped through and over it. If this is not attended to, Peaches, &c., will not ripen their wood sufficiently in cold places.

We have no objection to Cuba bast, except the expense. We object even to matting on the same score, only when much is done, and workmen are careless, a little waste with them is not so expensive as waste in thread would be. Common string or small tar cord for the biggest branches, and fine string for the smaller twigs, tied loosely so that the branches hang in the tie, is the neatest and most economical of all, if the workman manages the tie-end so as not to lose a bit by cutting off close to the knot. There is not one young gardener in a hundred but will waste no end, even of matting or Cuba, if not looked after. You will find as many inch, and two-inch, and three-inch pieces lying at the bottom of the trees, as, put together, would have done all the tying. This can only be avoided by using as much of the end of the string as will make the knot and no more. Half an inch cut off is just so much wasted, whatever the tying material may be. If matting or Cuba is used, the strings if twisted should be twisted only once, if the ends are held as they ought to be, that will do. How often will a man twist a string of matting, make one tie, cut off 2 inches or 3 inches, and then stop to twist again? Well, a nice little thread avoids all this, and where much is to be done the small ball of thread may roll in the workman's pocket. Such cord and thread I believe to be the cheapest securers under such circumstances.

Where walls are good and there is a desire to keep them so, but wiring is thought to keep the trees too far from the wall, the wall is studded with nails, designed to be permanent, and the trees are tied to the nails. The distance of these nails may be regulated according to the tree cultivated. Placed in lines some 5 inches or 6 inches apart is a good distance. The largest cast metal, or others fully as large, should be used. If such is resolved on, it is a good plan to heat the nails pretty well in an old saucepan, and then pour them into a vessel of oil, allow them to remain for an hour, and then drain the oil from them by a sieve. Thus done they will not rust for many years—a matter of importance if the wall is to be kept nice and in good order. Iron studs a little larger than nails, with open holes at the ends would be more handy but more expensive.

Where the old mode is resorted, we would still prefer rope-yarn, tar string, or willows for the big branches, and shreds only for the smaller twigs, and these as small and dull coloured as possible. The pack-thread willow is the best, and when small ones in quantity cannot be obtained, from the willows growing too strong for that purpose, a part of the shoots may be topped in spring, which will cause two or three shoots to come instead of one. In tying, the willow is first twisted round the nail, then brought round the shoots, and twisted with a running knot, the strain keeps it fast enough. Men used to it will do the work as quickly as with rope-yarn or more so.—R. FISH.

MUSHROOM CULTURE.

YOUR correspondent, "AGARICUS'S," method of growing Mushrooms in boxes, is a plan that suits me exactly. Consequent on my beds being every winter torn up by mice, I am having two boxes made, and fancy I can have them covered with a wooden-lid without injury to the crop, but cannot have horse-droppings from gatherers to prevent too rapid fermentation. Do you think a mixture of cowdung will have the same effect as a substitute?—ALPHA.

[At this season it will be better to employ horse-droppings from the stable without any mixture of cowdung, as it would, probably, check fermentation too much. There is no necessity for horse-droppings from the road unless very convenient, those from the stable when unmixed only require a little more time to reduce the violent heat. Cowdung has not been tried, and, therefore, cannot be recommended. Small-meshed wire coverings for the boxes would be better than wood, admitting some air and light, and, probably, the Mushrooms would be of a higher flavour.]

A PEAR TREE PARTLY ENCLOSED IN AN ORCHARD-HOUSE—SECOND CROP OF FIGS.

IF, in forming a lean-to orchard-house, a Winter Nelis Pear (with an eastern aspect) of ten years' standing be partially included with its stem, should the enclosed branches be encouraged?

Should a second crop of Figs (three parts formed) be allowed to remain on the tree, which latter is placed in a house provided with boiler and water-pipes, but only heated to keep off the effects of frost from plants and flowers?—A SUBSCRIBER, *Bruton*.

[If the Winter Nelis is well supplied with fruit-buds it will be encouraged to set well; but unless you can give plenty of air the flavour of the fruit will not be so good as if more exposed.

Did you give more heat to your Figs they would not ripen for six weeks, and then be flavourless. With the heat you speak of they will most likely drop ere long. Better take them off at once. Cut them, do *not* pull them. If any about the size of Peas, let these remain.]

FAIRRIE'S QUEEN PINE APPLE.

IN your Journal of October 29th I see that Mr. Appleby, in writing on the "Culture of the Pine Apple," in describing the varieties, stated "Fairrie's Queen, I first saw this fine variety at A. Fairrie's, Esq., Aighburth, near Liverpool, in whose pinery it fruited, I believe, for the first time in England." Now, I am anxious to know on what authority this Pine has obtained the name of Fairrie's Queen.

The Pine in question was raised at Hurst House, near Liverpool, by Mr. Durden, the gardener at that place, and the stock purchased by Mr. Fairrie for a good round sum.

It has been before the public under the name of "Hurst House Seedling," and is sold as such.

It is a particularly dwarf variety, of good flavour in summer, but nothing in winter. Many who have purchased it complain of its being slow to fruit; but, as I saw plenty of fruit at Aigburth, there may be some peculiarity of treatment required.

The giving new names to plants already named and known may be of use to nurserymen and those interested in their sale; but the reverse to gardeners and purchasers. It was this alone caused me to notice the subject, as Mr. Appleby's Fairrie's Queen Pine Apple is the Hurst House Seedling.—T. Shortt, *Raby Castle.*

VENTILATING A VINERY — WATERING — PROPAGATING BRUSSELS SPROUTS.

What do you consider the most efficient and at the same time economical way of ventilating a span-roofed vinery, 27 feet by 14 feet, which, being enclosed on every side by seven-feet-wide lean-to's from the eaves, must have air given in the roof?

The mode recommended by you of swinging every alternate pane seems fraught with considerable difficulty and expense; and moreover, the uppermost pane of glass by the roof-tree is not 20 inches by 15 inches deep as the rest of the roof, but only 20 inches by 10 inches deep, occasionally two slips of 5 inches (so glazed for economy's sake to avoid waste). Under these circumstances, after conference with my glazier and joiner, I cannot but think some other plan might answer as well or better.

One plan would be to have sash-frames made 61½, or 41 inches by 25 inches, to be glazed with the two panes at the apex, and hinged to the roof-tree, and shut and opened by a flat iron bar pierced with holes fitting on a stud in one of the sash-bars, or in a piece of wood fixed across and between the sash-bars to receive the frame. If this seems to you a likely plan, please advise me as to the length—three sash-bars or two, and as to the number which would suffice. I only suggest this plan, because it seems to me likely to be cheaper than pivoting a square here and there, and because I cannot see how to turn the water by that method, though I have tried my best to understand Mr. Fish's directions, Vol. XXIII., page 347.

Another plan that has occurred to me is to make some of the large panes at the eaves, or any other part of the roof, slide by fastening a slip of wood under them along the sash-bar, and surrounding the square with tin, to the centre of which a string or wire might be attached and pass through an eye, so that one might pull the pane up easily. This seems to me likely to be the cheapest plan as far as first cost goes, and also the simplest if it will work. As I have not the advantage of experienced neighbours or workmen, I should be exceedingly obliged if you would kindly give me your advice when convenient.

Two years' experience in orchard-house culture has given me a suggestion which, for all I know, may be nothing new, but at all events I feel myself bound to give it. Instead of a syringe, I find that a small forcing-pump (fixed or moveable), inserted in a tank for collecting the roof water, with Indiarubber hose the whole length of the house, not only saves labour but enables the syringer to deluge every leaf with the utmost ease and certainty. Of course, two are required—one to pump, another to direct the hose. Where the work is done by gardeners I think this simple plan cannot be surpassed, and saves much time and labour both in syringing and in watering pots. I must, however, warn my brother amateurs that the hose is very detrimental to good clothes, and I would therefore recommend such to obtain an apparatus to be worked by one alone. What I would recommend and mean to adopt is a garden engine on a scale small enough to go among the fruit trees without danger, with a hose of about 4 feet attached to it, so that the operator can pump with one hand and direct the stream with the other. Such a machine could be made by a plumber or tinsmith for about 25*s.*, and would save many an arm-ache and red spider too.

Before concluding, may I ask why gardeners habitually sow Brussels Sprouts, when the plant will shoot again from one of the bottom buds if properly managed, and produce its heads as soon as sown plants—a fact I learnt by one or two stalks having been left in a corner of my garden this year?—Ignoramus.

[In answer to your letter, Mr. Fish says that you would need, at least according to your plan, four ventilators, 41 inches by 25 inches, and that he has no objection whatever to any of the plans you propose for ventilating, provided sufficient air is given; and he also thinks, that if you cannot open in the lean-to's at the side, as many squares ought to be made to open in the eaves of the central house. He does not, however, think that either plan will be so simple as one he detailed lately for giving air to a lean-to house at the apex of the roof, and which is even simpler than that described at page 347, Vol. XXIII. inasmuch as a stout screw nail does all the work of the pivot. Suppose, then, that every alternate space is ventilated; and as 10 inches would not be enough, that these ventilators were 20 by 25, or rather 20 by 23 in the opening, for on taking out the ten and fifteen-inch squares, a piece of wood 2 inches broad at least would have to be inserted to receive the upper end of the squares and for the bottom of the ventilator to rest upon and just pass over to throw the water down the glass. The space between the rebates will therefore be 20 inches by 25 inches deep. The bulk of the ventilator will therefore be 20 inches wide. The upper third will be about 18½ inches, to as to go freely between the rafters. The top and sides may be 2 inches wide and 2 inches deep, grooved to receive the glass. The bottom rail should, like the front rail of a common sash, be 2 inches wide and 1 inch thick, and the glass will rest upon that. The lower part of the ventilator will therefore rest on the cross-piece placed to receive the third pane from the top, and will go between the rebates and rest on the rafter at the sides. The upper part of the ventilator will go between the rafters, and be fastened to them with two screws firm in the rafters but loose in the ventilators, so as to move easily as on pivots. A string fastened to a hook or ring in the centre of the top pulls the upper part of the ventilator downwards, and causes the lower part to rise upwards, and thus the air is given at the very apex as well as further down, and the stream of air is divided. These strings or stout pieces of wire may be fixed to a rod, and all the ventilators moved at once if deemed advisable. Whenever the strain is taken off the string the ventilators will shut of themselves by the weight of the lower part, only they should not be allowed to come down with a crash. A pin to fasten the string to is all that is needed. Where great nicety is required a little rain may come in where the ventilator joins the ridge-board. If there is lead there, it could be turned up at the edge, so as to throw the water on the next row of glass where there is no ventilator. If there is no lead, two small fillets of wood placed over the openings, will throw the few drops past in a similar manner. Then for the part of the ventilator that goes inwards, a strip of zinc may be placed on the upper part of the rafters to overhang these upper eight inches of ventilator; and if great nicety were required, a strip of zinc an inch wide might overhang the lower end of the ventilator 16 inches deep that stands above the rebate. Place two strips of wood to represent rafters, make a ventilator on the same principle, and try it before adopting it; but by all means try any other plan you consider better. There is one thing in which your sash hinged at the back and opening outwards will be an improvement—and that is, you can more easily cover the opening to keep out flies, wasps, &c.; but we like air in such circumstances to come in and go out at the highest point. We do not think that in economy of air-giving it would excel.

In a span-roofed house no plan is better than having a double ridge and the openings for air between them. But for the look of the thing, we would advise our correspondent, if he objected to all these modes, to take out his ten inches of glass and have a wooden ventilator of that width all the way, say in three divisions, which could be raised easily by a pulley against the back wall.

As for the pumping and syringing, it is all very well for amateurs: what about the poor gardeners' clothes? Small moveable engines are common enough, and are very useful in many cases, but no twisting and bending of hose will ever get about a plant like the flexible arms of a good workman with a good common syringe. We do not discourage any of these nicknacks—they encourage trade, and amateurs can do the work often in a more cleanly way with them, just as a lady may pick up weeds nicely with a pair of gloves on, though we should consider a garden boy with gloves on for such a purpose not worth his salt, let alone the beef and greens. In most cases, for general purposes the simpler the tools are the better and more efficiently the work will be done. A general brought us one day from one part of the garden to the other extremity, to show us how waterbarrows on a frame and wheels could be greatly improved, and that was by having a brass tap fixed near the bottom so as to fill the pots from it. Now this plan would suit a lady or a gentleman nicely, and would save fine polished boots from being tarnished; but as the barrel was hung on pivots, and could easily be bent to a side after the first pailful or two were dipped out of it, we should expect the barrel to be about emptied whilst the man stood for a pail to be filled from the nice tap. If a natural force can be applied there would be much use in such hose, not only for particular but for general purposes; but in the case supposed we fear it smacks too much of the improvement in waterbarrows.

Gardeners habitually sow Brussels Sprouts, because, on the whole, it is the best plan; not only will the roots grow as you state, but the side shoots will also grow if firmly inserted in the ground; and though many of these will throw bloom, yet, if perseveringly nipped off, a good plant will ultimately be obtained. We have grown quarters of Cabbage in the same way, but we found no benefit in a practical point of view, though it is interesting for keeping a good sort. We have now some strong plants of Scotch Cabbaging Borecole or Kale that have thus been propagated for three years. At first we did it in case we could not get the sorts, stripping off shoots in April, and planting them like young plants, but we do not see that they are any better than young plants, though they certainly save seed, and the bother of slugs eating them when young; but there is a good deal of trouble in getting an even crop, as some side shoots are more liable to throw up flower-stalks than others. We may mention in conclusion that the above Borecole is longer in seeding in spring than any other green we know. These things are nothing strange to gardeners, but we feel sure many amateurs and cottagers will be obliged to our correspondent for directing attention to them. Scarlet Runner roots if saved in sand, like Dahlias, will grow for a number of years; but then they do not do better than seedlings.]

NEW AND RARE PLANTS.

Hoya lacunosa *var.* **pallidiflora** (*Pale-flowered Furrowed Hoya*).

Nat. Ord., Asclepiadeæ. *Linn.*, Pentandria Digynia. This has also been called an Otostemma. Flowers greenish-white, and inconspicuous. Native of Java.—(*Botanical Mag.*, *t.* 5272.)

Mutisia decurrens (*Decurrent-leaved Mutisia*).

Nat. Ord., Compositæ, Mutisieæ. *Linn.*, Syngenesia superflua. It has also been described as M. heliantha. A splendid species of this scandent, cirrhose-leaved genus. Messrs. Veitch and Son flowered it in July of the present year. "It endured the last severe winter unharmed in the open air at Exeter, without a shelter. It is a native of the Andes of Chillan. The fruticose plants of the high and dry Andes of Chili, are difficult of cultivation, it is feared, and require very peculiar treatment."—(*Ibid.*, *t.* 5273.)

Salvia cacaliæfolia (*Cacalia-leaved Sage*).

Nat. Ord., Labiatæ. *Linn.*, Diandria Monogynia. Nearly related to *S. patens*. Native of Chiapas, Mexico, growing in Pine forests, and probably hardy. Flowers deep blue.—(*Ibid.*, *t.* 5274.)

Gonatanthus sarmentosus (*Sarmentose Gonatanthus*).

Nat. Ord., Aroideæ. *Linn.*, Monœcia Polyandria. Also called Caladium sarmentosum. The generic name alludes to the geniculate character of the spathe, and the specific name to its throwing out stolones. Native of the Khasia and Himalaya Mountains. Flowered in the Kew stove in May. Spathe tawny yellow, and sometimes a foot long.—(*Ibid.*, *t.* 5275.)

Impatiens flaccida (*Soft-leaved Balsam*).

Nat. Ord., Balsamineæ. *Linn.*, Pentandria Monogynia. It [illegible] also had applied the specific names of *pulcherrima*, *latifolia*, and *lucida*. "A lovely species of a lovely genus." Native of Ceylon mountains, at elevations of from 4000 to 6000 feet. [illegible]

[illegible] (*[illegible]wered Spiranthes*).

[illegible] *n.*, Gynandria Monandria. It has [illegible]en included in [illegible] [illegible]phrys and [illegible] [illegible]ut with the [illegible]me specific [illegible] [illegible]ly a nati[illegible] [illegible]d. It was [illegible] [illegible]letown. [illegible]er Haven [illegible]

SCARING-BIRDS FROM GOOSEBERRY BUSHES.

Recently in The Journal of Horticulture I observed that a correspondent complains of the destructive ravages of birds on his Gooseberry bushes, and has hitherto tried a variety of expedients without being successful in putting a stop to their depredations. Here we are terribly annoyed by these feathered imps attacking not only Gooseberries and Black Currants, but also May Duke Cherries. The former, however, they seem to be specially fond of. But all that we have to do, as far as Gooseberries and Black Currants are concerned, is to carry a number of white cotton threads, from point to point, of the young shoots, all over the bush, forming a sort of net work. This at once puts a stop to further mischief. But however efficient this simple remedy may prove, in some instances, it utterly fails in others. In cases of failure with cotton thread, I have used red Berlin wool with good effect; indeed, it is the only preventive I have any real faith in, put on in the same manner as the cotton thread, only with the addition of a few white or light-coloured feathers tied loosely on the cross threads. I have known this succeed in scaring them away when everything else tried had failed.

There is another substance I have made use of, and frequently with good results, powdered hellebore 1 lb., to four gallons of water (cold), well stirred and sprinkled over the bush by means of a dusting-brush. We use it for the destruction of caterpillars, and on one occasion I sprinkled a quantity of it over one or two bushes, and noted the result, when it soon became evident that the hellebore was distasteful, as these bushes in future remained untouched. The worst of this remedy is, that heavy rains wash it off and leave them again exposed.

If your correspondent "D," has not already tried either of the above, it might be worth while to make the experiment.—J. D., *Lancashire.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

Every opportunity of favourable weather should be made available in carrying out whatever digging, trenching, and draining have been marked out for completion during the winter months. *Brussels Sprouts*, when the head is cut the dead leaves to be removed, but none of the green ones, as they protect the young side sprouts. The same treatment is applicable to Scotch Kale, and other winter greens. *Cabbage*, when a favourable opportunity occurs take advantage of it to earth up the autumn plantation; it not only invigorates but prevents them from being loosened by the wind. *Cauliflowers*, never neglect giving air to those under hand-glasses and in frames daily, unless during severe frost; if the plants are now drawn by an insufficiency of air they will be liable to button off. *Endive*, any that may have been planted in frames should have air freely admitted, to prevent its rotting. *Mushrooms*, the beds out of doors to have a thick covering of straw, over which to be placed mats, to protect them from wet and frost; when the straw is wet it should be replaced by dry. *Parsley*, as it is indispensable for the kitchen frames should be placed over a portion to protect it from frost, some roots should also be potted, and placed in some house, pit, or frame, where it will be protected from frost, and when wanted to be placed in a house where forcing is going on. *Potatoes*, the land intended for their culture to be rough dug, and exposed to the action of the weather as much as possible; and manure, if employed at all, to be sparingly applied. *Radishes*, as soon as they come up in the frames give air at every favourable opportunity, to prevent drawing. *Strawberries*, if not already done, to be dressed with short rich manure; as it is not advisable to dig between the rows, the manure can remain on the surface until the spring when it can be slightly pricked in with the fork.

FLOWER GARDEN.

Deciduous shrubs may now be pruned whenever there is time except during severe frost. Many of the large-growing sorts will require going over to reduce straggling shoots to proper limits, and to thin out where too thick. Prune Cytisuses, Spiræas, Deutzias, and other such low growing shrubs, if a good show of flowers and uniformly-shaped bushes are required. Where walks are in good condition, but have weeds still making their appearance [illegible] surface [illegible] should be had [illegible] hand.

picking, as the use of the hoe and rake should be avoided at this season of the year as much as possible. Those walks which are overrun with Starwort, Liverwort, and the various Mosses had better be dug over with the spade, thereby consigning the whole to oblivion, and presenting a new surface to the eye, which, when rolled down smooth and level after the operation of digging is finished, will maintain a neat and clean appearance for some months to come. Take advantage of wet days to clean out flower and other seeds from their stalks, and to tie them neatly into packets, correctly naming each sort; also to make and write labels, to prepare sticks, and to tie them into bundles, and to stow them away in a dry place until they are wanted.

FRUIT GARDEN.

Continue to prune and nail wall trees; but in no case should old shreds be used without boiling, as they generally contain innumerable eggs of insects. It is also an excellent plan to wash wall trees with hot water from a garden engine; it should be boiling when put into the engine.

STOVE.

Continue former directions, hardening growths, and endeavouring to promote a quiet atmosphere, rather dry. Keep down all unnatural night heat.

GREENHOUSE AND CONSERVATORY.

Fires will be required here occasionally in dull weather, to be lighted in the morning in order that the houses may be thrown open during the day to promote a free circulation of air. This will dry up damp, and help to keep the plants in a healthy state. As a damp stagnant air is the principal cause of mildew amongst the more delicate kinds of Heaths and other hard-wooded plants, it is advisable to give them as much air as possible at all favourable opportunities. Stir the surface soil of the pots, to remove moss as well as to promote a free evaporation from the surface. Seedling Cinerarias and herbaceous Calceolarias to have a shift if requisite; if the plants are strong they may be transferred at once to their blooming-pots. Particular care is now necessary to keep the conservatory dry; water to be applied carefully in the fore part of the day, and every drip or water on the floor to be mopped up. Everything in the way of decaying blossoms, leaves, &c., should be at once removed; for if such things are allowed to remain they assist in producing mildew, dampness, and decomposition. The winter-flowering Correas, Epacrises, Acacias, Polygalas, Pimeleas, &c., will now begin to make a charming addition to the other inmates of the conservatory. Take care to give attention to judicious watering, more especially to the Epacris; it will not do to trust this process to inexperienced or careless hands. The bulbs of various Japan Lilies to be shaken out and repotted in a good fibrous loam with a portion of coarse sharp sand, and a pretty liberal supply of charcoal intermixed, good drainage, and a portion of rubbly charcoal to be laid over the drainage, the bulbs just require to be covered, while the pots in the first place should only be two-thirds filled; for, as they put forth abundance of roots for 2 inches or 3 inches up the stem, they may be considerably assisted by earthing up in spring with the same material. Let all bulbs arousing from their dormant state—such as the Amaryllis tribe, the Lachenalia, Oxalis, with others—have very moderate supplies of water until the leaves are somewhat expanded.

FORCING-PIT.

The Hyacinths and Narcissi potted in September or the early part of October may now be examined, and introduced successively in small quantities to this pit when their buds are 2 inches long, to be plunged overhead at the front or darkest part of the pit, covering them 4 inches in the old tan. Shrubs, if in proper condition for forcing, may be introduced immediately—such as Azaleas, Rhododendrons, Roses of sorts, Persian Lilacs, Sweet Briar, &c. W. KEANE.

DOINGS OF THE LAST WEEK.

ICE-HOUSE.

FROST on the 16th, a fall of snow on the 17th, which saved vegetables much; and a keen frost on the 18th and 19th, followed by a thaw on the 20th have regulated most of our operations. Cold pits shut up and covered on the 16th remained covered until the 20th, with the exception of a few openings here and there. We hardly expected the frost to continue; but if it should have lasted a week or more we were unwilling to disturb the covering of snow, which Nature had given us as the best of all protection; but when the sun succeeded in melting that, there was no reason why the covering should not be removed. We would have been at the ice-well-filling, but that would have interfered with a shooting party; and, therefore, we must wait for the next chance. In filling the ice-house we have used no straw for years, and it keeps all the better for the want of it. I know from trials, however, that a covering of dry straw on the top, and a circulation of air over it would keep it better still. As it is, our house would generally last two years if we should happen to miss one season. Other people like myself may have had some misty views on this subject; but to Mr. Beaton the lovers of cool luxuries are indebted for a clear definite philosophical statement of the best mode of preserving ice under different circumstances; and it is not the most generous thing in the world, to bring back a portion of his ideas across the Atlantic as some grand new discovery from our Yankee friends. Our late friend Mr. Errington would have said that was "screeching with his whistle."

KITCHEN GARDEN.

The chief thing here was making Celery all snug and safe, which the snow managed very nicely. A nice lot of white-hearted Cabbage we would have whipped into a shed, and set them then at their leisure, but the snow saved us the trouble. Savoys are more forward than usual this season; and, if the weather should again threaten to be severe, we will do the same with them, so that a little litter may be thrown over them. We have found there is little necessity in such circumstances for taking the plant up by the roots; if cut over by the surface of the ground, and the stem inserted in earth, it will absorb enough of moisture to keep the head fresh. The same will apply to Cauliflower and Broccoli when come to fully half their size. Looked after young Lettuces, housed more Endive, and boxed and potted more Parsley in case there should be a continued frost, as Parsley is a herb that must be had every day. Cleared away the rest of the Peas, Scarlet Runners, and laid down Broccoli a little, commencing at the north side of the rows, taking out a spadeful or two of earth—say 6 inches or 9 inches from the plant, pressing the plant down into the sloping opening, and then covering the stems to keep them down with earth removed from the next plants in the rows.

FRUIT GARDEN.

Pruned a little out of doors. Found that the leaves had not dropped from the Apricots, and left them alone in order that the first frost would not be so much felt by the buds. The wind will now sweep them off without our help. Covered up Strawberries that were in pots with hay and straw. Fruit trees and Rhododendrons in pots, mulched all over with litter to prevent the frost getting at the roots. Removed the leaves getting yellow from the late vinery, so as to keep the house sweet. Gave fire early with plenty of air, when mild, to keep the atmosphere dry. Roof too flat for this season, so that the condensed moisture will drop at times in spite of us. A steep roof is the roof for keeping Grapes late, as the water runs down the glass. Without that the sash-bars ought to be made with grooves below them to catch the condensed water from the glass, as it seldom drops from the glass, but finds its way to the sash-bars. When forcing of any kind begins, the great thing is to start gradually.

ORNAMENTAL GARDENING.

In the stove placed all plants that were showing flower, or that wanted more heat at the warmest end, and kept those intended for spring and summer blooming much cooler and drier; as for these purposes, in many cases, we wish to keep the plants in health, rather than to grow them, and this requires less fuel than if the house was kept at a high temperature. The temperature at the hottest end will average 60°; the coolest end from 50° to 55°, as opportunity offers; the plants needing it will be top-dressed or fresh potted, as there is so much else to do in spring. Many stove plants, as Gardenias, thrive all the better of this cool treatment in winter, and they are less liable to insects than when kept warmer. The same rule applies to *Ixoras* at this season, though they should not be below 55°; a sort of rest at that temperature, and kept rather dry, will cause them to thrive all the better when removed gradually to a sweet growing moist temperature of 70° to 75° in February and March, and at that time both Gardenias and Ixoras delight in a little sweet bottom heat, such as sweet tan would give them. Those who wish to have their conservatories gay at Christmas should now be moving some well-rooted bulbs into a hotbed or pit, so as to bring them early and well into bloom; bottom heat of such a pit from 75° to 80°, top heat from 60° to 65°, with air to keep sweet, and more when the sun shines.

GREENHOUSE.

Chrysanthemums will be the better for manure waterings, and so will Cinerarias and Chinese Primroses, especially if the latter are in smallish pots, and at this early period they will bloom better if the pots are not too large. Camellias may also require a little thinning of their buds; and Ericas and Epacrises should stand by themselves, so that the former at least may receive more air than is given to the bulk of the house. In *watering* at this season care should be taken not to spill water about, for careless waterers will make as much slopping as they would do in summer, when the more moisture about the stages and floor, the better it would be in fine weather. Now, every plant should be examined separately, and receive what it needs and no more, for all that runs over and is spilled on the floor, or shelves, will rise by evaporation, and be condensed against the roof, and in frosty weather when there is heat enough to melt it, it will fall over the plants like a cold sleety shower. When watered the water should not be lower than 50°, the plant should have enough to moisten all the roots, and receive no more until it wants it. Ringing the pots with the knuckles will soon tell if the soil is dry or not, as a dull sound will be emitted if the soil is wet, and a sharp sound if dry. Extra moisture at this season, however, present in the house, just speaks of extra attention necessary, extra firing, and, after all, extra likelihood of disappointment. The frost stopped us in clearing up the pleasure grounds; but the snow with its white mantle hid all defects, now we are at it again, getting the beds and borders cleared, though the leaves are not all down yet, and, therefore, we shall have more work in store. Those left seem battered and fixed on, which is often the case when the frost comes severe at first. That is not the worst of it: what are gone are gone indeed, the high winds have blown them I do not know how far off—a serious thing for me, not only as respects those in the pleasure grounds, but also those in the park, as from standing high the neighbouring valleys after such winds get all the benefit of the leaves, which I depend upon almost entirely for what little help I must have in getting artificial heat from fermenting substances. They collect in woods, it is true, but it is no use thinking about them; the worst of it all is, that there is no use grumbling, for if I did I should find some telling joke all over the neighbourhood about leaves at my expense. It is hard to keep down all spice of covetousness when I go to some large place and see waggon-loads of leaves lying unraked, and think what I could do with them if I could have them.

When the beds are all cleared, and the grounds cleared up, and the walks switched and rolled, then the beds intended for bulbs may be nicely prepared for the purpose; and if the bulbs were placed thickly in reserve-beds, as advised some time ago, they may be moved any time when the weather is suitable and the ground all right and favourable, and hardly ever feel the moving, and will thrive all the better from the ground being well prepared for their reception.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

[illegible] also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on [illegible] and Bee subjects, if they expect to get them answered [illegible] and conveniently, but write them on separate communications. Also never to send more than two or [illegible] questions at once.

[illegible] reply privately to any communication unless under [illegible] circumstances.

[illegible] CAPENSIS (*N. H. P.*).—You have it correctly named. In a [illegible] it grows shrubby [illegible] 2 feet high, but trained against a wall, will reach the height of 8 [illegible]

MELONS IN A PIT—WIREWORMS (*W., A Constant Reader*).—Tan will keep the heat longer than fermenting material. The Melons will be best planted near the back, as the flue is there, and then be trained down within 18 inches of the roof. Could you contrive any means of shutting in your flue, leaving openings for the heat getting out, and upright drain-pipes in front communicating with open drain-pipes below your bed, and communicating with a sort of chamber round the flue? This would give you a better circulation of heat in the house. You would see lately how a pit could be heated by a flue placed in the ordinary way. Orion is as good a new Melon as you could have, and the Beechwood as good as any though old. The gas water might cause the wireworm to flit, but the most effectual plan is to trench and dig well, and put pieces of carrot and turnip sliced all over the ground, just beneath the surface, and go round and examine them every morning.

BONES FOR MANURES (*W. W.*).—As you cannot grind them, have them broken into small pieces, dissolve them in sulphuric acid, and mix the compound with coal ashes or earth.

FICUS ELASTICUS—SOLANUM PSEUDO-CAPSICUM (*A Reader*).—Both plants will do well in the temperature of from 45° to 50° in winter. The Ficus (or Indianrubber plant), will want little water in winter if the pot stands on the ground or on a moist slab. The Solanum will want water according to the heat you give it and the character of the weather as to sun or shade. It is not, however, a great drinker in general. The Ficus will relish a little extra heat in summer if you can give it.

WOODEN TANK LEAKING (*A Subscriber*).—You had better take up the bottom of your tank and fresh place it, if the chinks are so open as you say. If the boards are well seasoned, beat at the sides, and tongued or not tongued, there would be no leakage so long as water was kept in. Of course, if left dry for months the joints will gape. So done, there is no necessity for lead or zinc. We have seen one used for ten or twenty years and then sound. Let your Stephanotis go along the rafters of the house.

PLANTING IXIA BULBS (*Eliza*).—The beginning of October is the best time to pot or plant Ixias. A rough peaty compost is the best soil for them, and the same treatment as for Calceolarias and Cinerarias in cold turf pits is the best of all modes of growing them. They may be planted, however, until the end of November.

WINTERING CINERARIAS (*B. B.*)—The best way to winter Cinerarias is in pits and frames from which frost is merely excluded; and if they are in strong, rich, loamy soil, they need as much air as each fine day of a whole winter will afford, or in other words the whole lights ought to be off in the middle of mild dry days.

PRESERVING BULBS FROM MICE (*O. P.*).—We are told that there is no effectual way of keeping planted-out Tulips, and Crocuses, and Persian and Spanish Irises, nor Peas nor Beans from the mice. Fresh soot has been known to put mice, rats, and cock pheasants on the wrong scent for a week or two, by sprinkling a good dressing of it all over the rows or beds; but so soon as it became wet it lost its power against the marauders. The tops of the young wood of whins, furze, or gorse, half chopped up and put in along with Peas and Beans, was an old receipt from the beginning to keep mice from garden Peas. But as no enemy of the gardener is less difficult to catch, that mode is the usual protection aimed at. Two inches in depth of coal ashes put over bulbs and rows of Peas we have found the most efficient protection against mice.

PRESERVING TROPÆOLUM ELEGANS (*Kent*).—The best way to keep Tropæolum elegans (the Crystal Palace Tropæolum), is to make cuttings of it in September, to have these well rooted by the first day of October, and from that day to the first day of March to treat the rooted cuttings exactly and in all respects like Mignonette that was sown in August to flower next May. You complain of your Tropæolum elegans that if they get "too dry they wither up, and if too wet they rot." But mind you, cuttings of the Oak and Scotch Fir would do just the same, and so would any other plant.

RIBBON-BORDER, &c. (*Senateur Vaisse*).—Yours is a very poor combination. However, this is the best you can do with it. 1st, Blue Lobelia, 6 inches from the Box, and 6 inches plant from plant if of proper size. 2nd, Variegated Alyssum, 10 inches from the Lobelias, and 8 inches plant from plant. 3rd, Dwarf Marigold, 8 inches from the Variegated Alyssum, and to plant three rows of it at 4 inches the one from the other row, to make one good row as it were. 4, Tropæolum elegans, just where you please and 1 foot apart. Perilla nankinensis is easily pegged down. It requires a moderately fertile loam. Diplotaxis tenuifolia variegata cuttings require heat in the spring. Cuttings of every softwooded plant, whether hardy or not, require heat to induce them to root at that season.

ALMANACK CRITICISM (*J. Hitchmen*).—Much obliged, but the almanack you refer to is far too contemptible to require castigation.

AUSTRALIAN IVY.—"*J. R.*" wishes to know if the so-called Australian Ivy is a true Hedera. It is a hardy, strong-growing, evergreen climber. There is an Ivy native of New Holland, Hedera macrophylla.

DYING STRING GREEN (*T. B. A.*).—We do not remember publishing a receipt for this; but dying the net for lark-catching brown is preferable, and that is done by dipping the net into a strong decoction of nut-galls.

DEUTZIA GRACILIS LEAVES DECAYING (*An Irish Subscriber*).—The roots of the plants are kept too wet in autumn. Put the pots under shelter before the heavy rains and chilly nights of autumn occur.

PROPAGATING AGAPANTHUS UMBELLATUS.—"Will you state when and how Agapanthus umbellatus may be best divided for propagation? I have hitherto cut the fleshy root, but have generally thereby hindered the flowering the following season. Will it part easily at any time without cutting?"—CLERICUS, *Staffs.*

[The last week in April or very early in May is the best time to divide Agapanthus umbellatus for increase, and there is no other way of doing it than the way you have proceeded—that is to say, some hundreds of coils of the finest-looking roots must be cut right through, up and down, and sideways of the ball, before it is practicable to reach where the different branches of an old plant join together in order to separate them. The reason is this—The feeders are so strong and so numerous in this Agapanthus, that by the time it is too old for blooming strongly the soil is all but gone, and the ball is made out of the roots which have interlaced, so that no patience or ingenuity can separate them without cutting. Even if the ball was washed by pipe and hose till there was no particle of soil left among the roots, it would take a [illegible] or ten days to undo the roots without breaking them.]

[illegible] (*F.* [illegible]).—The leader of [illegible] Humea may be cut [illegible] during

December, and to any extent, and the side shoots will bloom all the stronger. But how would a greyhound look with his tail and ears cut after the way they dock terriers? Just like a Humea without the leader. When a Humea is rightly grown, the leader is the weakest shoot of them all, and it never can rob, in the smallest degree, any one of the side shoots. But few plants are worse grown than Humeas. We have not seen ten well-grown Humeas for the last ten years. Ten inches for a stem, beautiful soft shining leaves falling over the sides of the pot or tub; the bottom shoots 10 feet from tip to tip, and sweeping the ground, and 7 feet from the top of the leader, with the cone in one mass of bloom, are evidence of a Humea well cultivated.

Ice-house (*W. Wilson*).—Mr. Beaton says he never wrote a word about building an ice-house—that is, an ice-well in a bank of earth. It is a wasteful bad plan. Cobbet's American ice-house, a drawing and description of which is in "The Cottage Gardener's Dictionary," is the best that has been published.

Water Weed—Anacharis alsinastrum (*G. M——x*).—This most troublesome weed is a native of America, and was brought hither with the timber imported from that country. It was first noticed in our islands by Dr. George Johnson, who found it in 1842, floating in the lake of Dunse Castle, Berwickshire. It is now frequently found in other waters of England, Ireland, and Scotland, and wherever found becomes a serious injury. Locks, canals, mills, and fish-ponds, have all been choked with it; and no means of eradicating it have been discovered. It is, probably, synonymous with *A. Nuttalli* of the American Flora. Swans are remarkably fond of it, and keep it well under in the waters they frequent. By constantly cropping it down they sometimes eradicate it, and an instance is published where the swans ceased to thrive so well after this weed disappeared from their lake.

Mixed Herbaceous Border (*An Old Subscriber, Wicklow*).—We will publish something on the subject next week. We shall be obliged by any of our readers sending us an account of any mixed herbaceous border or bed which they consider well planted and managed. The account should give a list of the plants and the order in which they are planted.

Flower-garden Plans (*J. C., Muckross Abbey*).—Buy our "Flower Gardening for the Many," free by post for five penny postage stamps.

Names of Plants (*F. L.*).—1, Nematanthus longipes; 2, Othonna crassifolia; 3, Silene Schaftii; 4, Jasione montana. (*G. W.*).—1, An Aralia, or Araliaceous plant not recognised. 2, Ardisia laterifolia; 3, Aralia pulchra; 4, very like Erythrochiton brasiliensis, but it is difficult to name plants from the leaves only without flowers. (*J. D., Dundee*).—1, Euphorbia helioscopia; 2, Lychnis vespertina; 3, Galeopsis tetrahit; 4, Prunella vulgaris. (*R. M.*).—1, Lythrum alatum; 2, Clethra arborea. (*W. Baynes*).—A good form of Polystichum aculeatum var. lobatum, with multifid apex. The Auricula leaf looks diseased; at any rate, the marking if a true variegation is not desirable. (*J. T., Amanthill*),—1, Gymnogramma calomelanos; 2, Adiantum formosum; 3, Asplenium adiantum nigrum (slender variety); 4, Woodwardia (Doodia) caudata; 5, Polystichum angulare, var. proliferum Wollastoni.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE IMPORTANCE OF POULTRY.

All our readers will recollect the "Sleeping Beauty." The older ones may no longer take any interest in the tale, but its associations will be with their youth, and however calm and pleasant middle or advanced age may be, there is a shade of sadness when past youth is thought of. It is a thing that can *never* return. To the young the old nursery tale is full of charms. The animals outside, the porter at the gate, the guards, the lords and ladies in waiting, the servants of every degree, all sleeping till the right person comes; then one sneezes, and another sneezes, till all wake up.

There is another tale not so well known perhaps. It concerns an old woman who went to market to buy a pig. It was necessary, in order to reach home, she should get over a style; she did so easily, but the pig would not. She then endeavoured to press every mortal person and thing into her service, with a view to their co-operation in coercing the obstinate animal. Dog, cow, butcher, fire, water, rope, all were asked in vain, till one began, and then all set to work, and the old lady and her troublesome bargain reached home safely.

Now, to our mind, the poultry question has been sleeping for many years. Two wicked fairies have bewitched it; one has taught large farmers the question is *infra dig.*, the other has pooh-poohed the thing altogether: therefore, houses and farms have been untenanted, so far as poultry is concerned; positive advantages are thrown away, and opportunities of making money are set at nought. We have no statistics, but we are in a fair way to have them; then we shall be surprised. Few persons, if any, are prepared to find the magnitude of poultry interests.

There is a question becoming more important every day. It is the supply of food for mankind. What if the new theory be a correct one, that while the numbers of inhabitants increase yearly, production has reached its acme, so far as the old channels are concerned. Those who hold this to be true, point to the sea as the only resource; but poultry may also play its part. France produces yearly 3,715,200,000 eggs; she consumes and exports between six and seven millions worth of poultry every year. Few things are more nourishing; none are capable of greater variety of cooking; and, we think we may add, nothing is so suited to the taste of every man, woman, and child as an egg. It is computed that France consumes every year nearly *four millions of pounds weight* of food in eggs only.

We know not what we eat in this pleasing form, but we know we import many millions that we might produce ourselves, and that if twice the present number were taken to market, there would at all times be a ready sale for them. We know the old martinets, in both army and navy, believe the services lost and gone to the dogs, because soldiers are no longer carefully strapped and bandaged, so that they can do nothing but stand upright; because the useful rifle is substituted for harmless brown bess; and because it is no longer necessary that, on grand occasions, a man should have a regulation "queue," weighing not less than a certain weight, fastened to the collar of his coat. In the sister service there are those who shake their heads ominously because a parcel of boys are put in command when an admiral, of less than seventy, hoists his flag; they hate the "noisy devils that go by steam," and mourn the day when first-rate seventy-two's waited for wind and tide and rendered invasion impossible. So in civic life, there are people yet to be found who are eloquent in praise of the old four-inside post-coach, and hate the nasty railways—time for a cosy cup of tea whenever they changed horses. In all these cases every improvement is treated as a mad innovation. It is said that in Elizabeth's time an act was passed to prevent any addition to London, on the ground that so many people would be brought together, it would be impossible to feed them.

Ridiculous as these notions may be in every case, they are not more so than that which considers poultry beneath the notice of an agricultural society. The Royal, of that name, adopted it for a time, long enough to prove it was a valuable auxiliary to their funds, and then it gave it up. Some laughed at it, and others talked about cocks and hens. Fulton was laughed at the first time he tried his marine steam engine; and the first man who discovered the power of steam was consigned to a madhouse. The adoption of poultry, as a pursuit, by those engaged in agriculture, or those who have space and opportunity for rearing it, cannot compete with these great things and discoveries; but that which adds millions of pounds weight annually to the food of a country, or millions of pounds worth to the yearly produce, cannot, or at least ought not, to be lightly thought of. Too much praise cannot be given to such a society as that of Birmingham, not only for their enterprise and perseverance in carrying out a great undertaking, but for that sound judgment which took at once a correct view of stock, and offered noble premiums for cattle, sheep, pigs, poultry, and roots.

In walking through the sleeping-courts we have at last heard the sneeze—that is the prelude to waking. Societies are everywhere taking up the question; magazines make it the subject of their papers; and thinking men who care for fowls no more than they do for sheep or cattle, except as articles of food, are not only making inquiry, but are willing to invest capital in the production of eggs and poultry.

We will conclude this by informing our readers there is a show at Perth, under the immediate patronage of Lord Kinnaird, on the first, second, and third days of January. The prize list is a liberal one. In the classes for Dorkings, Silver Grey and Coloured, each has four prizes of £5, £4, £3, and £1. The prizes for Dorkings alone amount to £31. Mrs. Fergusson Blair, and other exhibitors from Scotland, freely enter our southern lists, and are heard of at all our great shows. We hope some of our good breeders will not fail to return the compliment, and that goodly entries of English birds at Perth will prove that we like good opponents; that we return courtesy, and that we are glad to give every support to that which we believe to be far more important than anything that can be called a fancy.

OATS FOR POULTRY FOOD—POINTS IN A DORKING COCK.

Should ground oats for poultry be also sifted, or given husks and all?

Which is considered most objectionable in a Dorking cock, a speckled breast, or a white feather in the tail?—J. F. N.

[The ground oats should not be sifted, the entire corn should be ground as fine as possible, and nothing taken from it. We do not consider either of the points you mention as objections in a Dorking cock. Many people do, and we fancy they would rather forgive the white tail-feather than a spotted breast.]

SCOTTISH ORNITHOLOGICAL ASSOCIATION.

THE third annual Exhibition and competition of fancy Pigeons and Canary birds, under the auspices of this Association, was opened on the 21st, in the Trades' Hall. The Exhibition was a most superior one. In the Pigeon department, the competition, owing to the many excellent entries, was very keen; and amongst the entries for the special prizes were some very beautiful birds. The class pairs were numerous; and, in the Powter department, the birds were very good. The Carrier Pigeons were also numerous, and some of them exceedingly rare. In the Canary bird department some of the finest birds we have seen were exhibited. The following are the awards:—

PIGEON DEPARTMENT.

EXTRA PRIZES.

A Silver Cup, for the best Three Pens, one pair each, CARRIERS, POWTERS, and SHORT-FACED ALMOND TUMBLERS—P. Eden, Manchester.

A Silver Medal, for the best Pair Black POWTERS, bred in 1861—J. Millar, Glasgow.

A Silver Medal for the best Yellow POWTER, cock or hen, bred in 1861—G. Ure, Dundee (hen).

A subscription Silver Medal, for the best Pair of POWTERS (black and yellow excepted), bred in 1861—G. Ure, Glasgow.

POWTERS (Black Cocks).—First and Second, J. Millar, Glasgow.

POWTERS (White Cocks).—First, P. Eden, Manchester. Second, W. Smith, Halifax.

POWTERS (Blue Cocks).—First, G. J. M'Lean, Edinburgh. Second, P. Eden, Manchester.

POWTERS (Red Cocks).—First and Second, G. Ure, Dundee.

POWTERS (Yellow Cocks).—First, P. Eden, Manchester. Second, J. Huie, Glasgow.

POWTERS (cock any other colour).—First, J. Huie, Glasgow (Mealy). Second, W. Wallace, jun., Glasgow (Checker).

POWTERS (Black Hens).—First and Second, G. Ure, Dundee.

POWTERS (White Hens).—First, P. Eden, Manchester. Second, G. Ure, Dundee.

POWTERS (Blue Hens).—First, W. Smith, Halifax. Second, G. Ure, Dundee.

POWTERS (Red Hens).—First and Second, G. Ure, Dundee.

POWTERS (Yellow Hens).—First, P. Eden, Manchester. Second, W. Smith, Halifax.

POWTERS (Hens any other colour).—First, J. Huie, Glasgow. Second, W. Smith, Halifax.

CARRIERS (any colour).—Silver Medal, P. Eden, Manchester.

CARRIERS (Black Cocks).—First, P. Eden, Manchester. Second, J. Muir, Glasgow.

CARRIERS (Dun Cocks).—First, T. Colley, Sheffield. Second, A. L. Silvester, Birmingham.

CARRIERS (Black Hens).—First, P. Eden, Manchester. Second, J. Bairstow, Halifax,

CARRIERS (Dun Hens).—First, J. Bairstow, Halifax. Second, W. Cannan, Bradford.

SHORT-FACED ALMOND TUMBLERS.—Silver Medal, P. Eden, Manchester.

SHORT-FACED ALMOND TUMBLERS.—First, P. Eden, Manchester. Second, W. Cannan, Bradford.

SHORT-FACED TUMBLERS (Mottles, any colour).—First, P. Eden, Manchester (Black Mottles). Second, I. Monkhouse, Kendal (Black Mottles).

SHORT-FACED TUMBLERS (any other colour or variety).—First, M. Stuart, Glasgow (Red Agates). Second, H. Wardle, Newcastle (Kites).

FANTAILS (any colour).—A silver medal, G. Ure, Dundee (White).

FANTAILS.—First, G. J. M'Lean, Edinburgh. Second, G. Ure, Dundee (White).

JACOBINS (any colour).—A silver medal, J. Peel, Usworth, Sunderland.

JACOBINS.—First, J. Sharp, Johnstone. Second, J. Greig, Innellan.

TRUMPETERS.—First, W. Wallace, jun., Glasgow (Black Mottles). Second, W. Cannan, Bradford.

BARBS (any colour).—A silver medal, P. Eden, Manchester (Blacks).

BARBS.—First, J. H. Frame, Overton (Black). Second, P. Eden, Manchester.

TURBITS (any colour).—A silver medal, W. Smith, Halifax.

TURBITS.—First, R. Pickering, Carlisle (Blue). Second, W. Cannan, Bradford. [illegible]

OWLS.—First, W. Smith, Halifax. Second. W. Cannan, Bradford.

NUNS.—First, F. Key, Beverley. Second, J. W. Edge, Birmingham.

MAGPIES.—First, J. Zieglar, Edinburgh. Second, [illegible] Smith, Halifax.

RUNTS.—Prize, W. Wallace, jun., Glasgow.

COMMON TUMBLERS.—First, A [illegible] Edge, Birmingham.

OTHER BREEDS.—First, G. [illegible] [illegible]n, Bradford.

JUDGES.—Mr. Andrew Cow[illegible] [illegible] Hedley. [illegible] Mr. Henry Simpson, New[illegible]

CANARY DEPARTMENT.

EXTRA PRIZES.

[illegible] l 1s. as a [illegible] [illegible]tch [illegible] ne produce of 1860, or prior thereto; th[illegible] el[illegible] [illegible]ck and b[illegible]f hen, or buff cock an[illegible] [illegible] Glasgow. Second, J. Halley, Car[illegible]

[illegible] prize for the most portable [illegible] [illegible] exhibitions [illegible] W. Alexa[illegible] Edinb[illegible]

SCOTCH FA[illegible]

[illegible] Prize[illegible] [illegible]est [illegible] [illegible] [illegible]

M'Murray, Edinburgh. Third, G. Ayton, Glasgow (special. Fourth, D. Gunn, Glasgow (special).

BUFF COCKS.—First, J. Wren, Paisley (special). Second, W. Hunter, Kilbirnie (special). Third, J. Armstrong, Glasgow. Fourth, D. Gunn, Glasgow.

Special and Association Prizes.

YELLOW HENS.—First, A. Gibb, Paisley (special). Second, W. M'Leod, Glasgow. Third, J. Halley, Carron. Fourth, A. M'Lure, Glasgow.

BUFF HENS.—First, J. White, Paisley (special). Second, J. Johnston, Kilmarnock (special). Third, J. Ritchie, Edinburgh (special). Fourth, G. Horsburgh, Glasgow.

BELGIAN FANCY.

Special and Association Prizes.

YELLOW COCKS.—First, J. Ruthven, Glasgow (special). Second, J. Duncan, Glasgow. Third, R. Sommerville, Edinburgh.

BUFF COCKS.—First and Third, J. Ruthven, Glasgow (special). Second, J. Simpson, Edinburgh.

Special and Association Prizes.

YELLOW HENS.—First, J. Simpson, Edinburgh (special). Second, J. Birkett, Dundee (special). Third, J. Thorp, Dumfries.

BUFF HENS.—First and Second, J. Ruthven, Glasgow (special). Third, J. Simpson, Edinburgh.

PIEBALDS.

YELLOW COCKS.—First, T. Pate, Beith. Second, N. M'Lean, Glasgow. Third, A. M'Lellan, Perth.

BUFF COCKS.—First, D. Duncan, Carron. Second, J. Jamieson, Balgray. Third, A. Conn, Glasgow.

YELLOW HENS.—First, T. Pate, Beith. Second, J. Vine, Paisley. Third, R. Laurie, Glasgow,

BUFF HENS.- First, J. Jamieson, Balgray; Second, W. Alexander, Edinburgh. Third, W. Wilson, Mauchline.

GOLDFINCH MULES.

YELLOW COCKS.—First, W. Kirk, Dunfermline. Second, W. Wilson, Mauchline.

BUFF COCKS.—First, W. Kirk, Dunfermline. Second, J. Duncan, Glasgow.

JUDGES.—Messrs. George Grant, Paisley; George Crawford, Beith; James Graham, Kilmarnock; Jacob Beeby, Carlisle; Charles Gordon, Glasgow; George Ayton, Glasgow.

FEEDING GOLDFINCHES—KEEPING PIGEONS.

I HAVE had a Goldfinch for about three years, and have fed him on hemp, canary, and rapeseed, and until the last few weeks he has thriven on that diet, but he now seems out of health, for he does not sing, and sits with his feathers ruffled. He moulted some weeks ago, so he ought to have recovered from the effects of that.

I am aware that my plan of feeding is a wasteful one, as the bird, preferring the hemp, scatters the other seed about in order to reach it. I have tried leaving out the hemp, but find it invariably makes him sulky. When he was in health I once or twice gave him no hempseed for a day or two, and he was always in ill-humour, but was restored to cheerfulness by a supply of his accustomed dainty. I give him occasionally thistleseed and groundsel. Can you suggest a better diet?

Will you at the same time be kind enough to answer another question? I wish to keep a few fancy Pigeons for amusement. Which do you consider the prettiest and most desirable kind? —A LOVER OF BIRDS.

[Your complaint respecting the Goldfinch is only another example of the evil effects of giving cage birds hempseed. The hemp plant contains an extract of an intoxicating nature resembling opium, and the seed is found to have an exhilirating and exciting effect on most birds. I would advise you to wean your bird gradually from both hemp and rapeseed; give him good canary seed, shelled oats, and a little mawseed; let him have plenty of groundsel, chickweed, and the seedy heads of thistles and dandelions. Probably there may be an obstruction of the oil gland on the rump; if so, gently press out the coagulated oil and matter, but do not cut or prick the swelling, as the matter ought to pass out of the natural opening; then anoint the part with fresh butter or pounded loaf sugar.

So much depends on taste and fancy that it is impossible to advise in the choice of fancy Pigeons; all are beautiful. You had better visit some show and choose for yourself. If well fed they will do no harm in a flower garden, as they would only eat a little salad. The rabbit-hutch mentioned, if provided with a couple of nests, and hung up out of the reach of stray cats, would accommodate one pair of Pigeons. They may be procured at any time, and to prevent their flying away, they should be confined for a few days till they become accustomed to their new abode; three days is often long enough, but for safety I [illegible] [illegible] [illegible] [illegible] especially if [illegible] [illegible] let out too soon, their natural desire for home will induce them to try to return there, and as they might not be able to find it, they would very likely be lost. They should be so confined that they may see about their new place, that their sight may assist them in recognising it when let out. For food—tares, beans, lentils, and buckwheat, are among the best, with clean water, a lump of salt to peck, and some grit, as old mortar or broken oyster-shells. For nest-building, birch or heath twigs are preferable to straw; and a little sulphur dusted among their feathers and in the nest will help to keep them free from vermin.—B. P. Brent.]

THE SUPER-POSED HIVE DOES NOT BECOME THE STOCK-HIVE.

My attention has lately been called to an article in this Journal in which "A Renfrewshire Bee-keeper" states, as his opinion, that a queenless hive placed on another possessing a queen will, after the excitement consequent upon the operation subsides, become the stock-hive. This is certainly contrary to my experience during a careful observation of many years. I do not consider that the pollen-laden bees would give themselves the trouble of traversing the combs of the lower hive to reach the seat of breeding in the upper box, but in all instances convert this hive into a store-house, as it is known that they prefer storing at a distance from their entrance. Even in the case of a supered stock-hive the combs, as they are worked down into the lower box, become the seat of breeding, not of honey-storing; and in most instances a transference takes place, the supered stock becoming to a great extent the storing-hive.

My experience, then, amounts to this—that in no instance have I found the top hive become the stock-hive: and therefore I can endorse the statement of "A Devonshire Bee-keeper" that the lower box is the seat of breeding, the upper hive being for the storing of honey.—G. Fox, *Kingsbridge, Devon.*

THE STORIFYING SYSTEM.

Heartily concurring with your much-esteemed correspondent "A Devonshire Bee-keeper," that the development of truth is the main object your correspondents aim at, and my only motive in having the temerity—a comparatively young bee-keeper—to call in question the editorial reply in "A. W.'s" case, page 38, you may judge of my disappointment at observing the very decided opposite opinion expressed by your excellent Devon contributor as to my experience of such a case, and my satisfaction at so high an authority as our paternal one, Mr. Brown, of Stewarton, spontaneously stepping forward to decide by such a lengthened experience the point at issue. That gentleman, although being personally an entire stranger, if I mistake not, I have on more than one occasion delightedly inspected at several Glasgow warehouses many beautiful octagon trophies of his apiarian skill.

The same motive alone impels me to notice "A Devonshire Bee-keeper's" remarks on this point under "Super-posing" at page 139. It is an established rule in storifying that all entrances be closed but the lowest, and in that manner I have wrought a set of boxes attaining a height of 30 inches: to overcome the objections that might be brought up against such an altitude, suggested to me, the "adapter plan," described in No. 5. There being more than one entrance left open would only afford an attraction to robbers, and in no way affect the result as your correspondent supposes.

His adducing the well-known fact of the honey being stored above must surely tell against his own argument, and prove a powerful attraction towards the ascension were not its being so stored an indubitable proof of the premeditated intention of the bees to ascend at the approach of severe weather.

Their descending on the advent of summer heat is also an established fact ascribable to the same influence of genial warmth that causes the opening of every flowering bud, but foreign to the subject on hand, as long before "A. W.'s" lower box would have been removed, and the upper hive, agreeable to his wish we would hope, nearly ready for swarming.

It is quite a common practice of storifyers removing the lower portions of their hives at the end of the season and replacing the same as may be required for breeding the following season, with the most beneficial results.

I have never experienced a more than usual number of drones while working on this system, nor can I coincide in your correspondent's opinion as to the large extent of drone-comb in the hive alluded to by me at page 59, the increase of the male sex being gradual season after season till the last, when they exceeded all due proportion, thereby rather establishing the growing age and consequent decay of the royal mother.—A Renfrewshire Bee-keeper.

LIGURIAN PROWESS.

In the Journal of Horticulture appears an account of a violent onslaught upon a solitary Ligurian stock by "all the bees in the neighbourhood;" but which resulted in the Italians being "able to hold out against the attack." As I happen to be a sufferer from a somewhat similar occurrence, in which Ligurians were the aggressors, I am tempted briefly to relate the circumstance.

In September last I was possessed of a strong swarm of common bees, with a remarkably fine and prolific queen, which had filled its hive with combs; but not being heavy enough to stand the winter, copious feeding was resorted to by means of two small bell-glasses filled with liquid food, tied down with leno, and inverted over orifices in the top of the hive. A few marauding Ligurians from the neighbouring apiary of "A Devonshire Bee-keeper" at first intruded themselves, and shared my bounty by licking the food from the outside edges of the bell-glasses. On perceiving this, I excluded them by carefully swathing the glasses in a couple of handkerchiefs, and all went well until I administered the last dose of syrup at nine o'clock in the morning of the 24th September. During my absence that morning a very great commotion was observed in the neighbourhood of the hives. On my return, about two o'clock, I was met by the exclamation, "The bees are swarming!" Putting on a bee-dress, I hastened to see what was the matter. Alas! a dreadful conflict was taking place! the Ligurians from my neighbour's apiary having fallen on my poor unhappy stock. The commotion continued until about five o'clock in the afternoon, when it subsided, and I found nearly all my bees killed, the combs torn to pieces, and the box as completely cleared of honey as if the bees had died of starvation!

Now, I wish to ask "A Devonshire Bee-keeper," or any other of your numerous apiarian correspondents, what is the best means of securing our native bees from the attacks of such insatiable plunderers, and what legal remedy we have against those who have imported these foreign marauders?—S. B.

[If the "native bees" will not stand a brush with the Ligurians, we counsel you to discard them altogether. Legal remedy you probably have none; but we are sure "A Devonshire Bee-keeper" will be happy to afford you a civil one, by assisting in Ligurianising your entire apiary.]

PARTHENOGENESIS IN THE HONEY BEE AND IN MOTHS.

As my name and address appear on the same page with Col. Newman's last polite communication, I hope if he should have the opportunity of forwarding to me a drone-breeding queen* or assisting me in my researches in any other way, he will not hesitate to avail himself of it; and, by so doing remove me from his category of "unknown friends."

I believe myself to be the first Englishman who has attempted to verify Von Siebold's researches into the phenomena of parthenogenesis in the honey bee, and have thus far found him perfectly correct. Next spring I hope to prosecute my investigations still further, and have little doubt that they will turn out equally confirmatory of the discoveries of this distinguished German naturalist.

Now, with regard to my meaning when I stated "that a drone-breeding queen is a virgin queen," I cannot accept the limitation proposed by the gallant Colonel, since I am satisfied that this is always the true state of the case, and shall be greatly obliged to any one who may enable me to test the correctness of my belief by the dissection of as many drone breeders as possible.

Whilst on the subject of parthenogenesis I may remark that this phenomenon has been observed in some species of moths as well as in the honey bee. In particular I would instance the silkworm moth, whose virgin progeny is both male and female.

In the singular case of a swarm issuing in July from a stock which had killed all its drones in June, I should imagine that if the hive had been examined at the time it would have been found that a second laying of drone eggs had taken place.

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* Any specimen for examination should be sent alive.

Without attributing the circumstances to "disease," I have much pleasure in confirming Col. Newman's observation that queens often depart from the usual routine of egg-laying, and that some queens are much more prolific than others.—A DEVONSHIRE BEE-KEEPER.

PARTHENOGENESIS IN THE QUEEN BEE.

I CAN fully enter into the feelings of intense satisfaction with which "A DEVONSHIRE BEE-KEEPER" made the post-mortem examination of a drone-laying queen, and found the result entirely corroborative of the investigations of the German naturalists.

It is much to be desired that his indefatigable labours may be rewarded also by the proof of parthenogenesis through the positive line of evidence, that of direct observation that copulation has not taken place.

The proceedings of the drone-laying queens do not appear to have been particularly noticed, but the account is worth analysing. The weather was very unsettled, yet two sister queens were duly impregnated. The passage of the hive was narrow, but not so contracted as to obstruct the passing of the queen. The number of bees was small, occupying a mirror-hive, and comb was made slowly. Here, perhaps, we have some clue. May an ungenial temperature in the hive restrain the queen from the desire of leaving it, or does it so affect her system that copulation is ineffective? There is analogy to this in the vegetable kingdom. Flowers which resist the influence of pollen in England, become fruitful in the warmer climate of Australia.

It is not quite clearly stated by Mr. Briscoe, whether the queen had begun to lay before feeding was commenced. Might this have acted as a stimulant to produce eggs, or has a queen not the power to retain them after the fatal twenty days are passed?

I offer these suggestions in the hope that it will not be considered that the subject is exhausted, and that no opportunity may be lost of throwing further light upon it. A fortunate accident may reveal much, or an experiment in autumn, where it can be ascertained that there are no drones within an area of four miles (it is very probable the flight of both queen and drone may extend two miles), and, above all, by placing the queen in the unicomb-hive, where she can be looked at every day towards evening, the evidence of fecundation being apparent for several hours.

Many apiarians may be able to offer some facts, which if strictly accurate would be useful. I can speak with certainty of only one family in which the queen proved a layer of drones only. It was a second swarm, and filled only about one-third of the hive with comb. The whole of the bees disappeared when sent to the moor, leaving worker-comb deformed by the ceiled drone-brood.—INVESTIGATOR.

UNITING BEES.

IF Mr. Hood, who wrote in your issue of the 5th, had placed his full hive in a common kitchen metal pot so as that the hive would rest on the sides of the pot, but not on the bottom of it, placing as he has done his empty hive closely on top of his full one, and then with two light sticks strike the sides of the pot, he would drive every bee into the empty one in fifteen minutes, when it should be immediately taken away. I have removed bees in that way in the early part of last July, without leaving one in the full hive, nor losing half-a-dozen of my bees.—ALPHA.

SUPER-POSING—INTRODUCING FOOD DIRECTLY INTO THE COMBS.

[illegible] excellent correspondent, "A RENFREWSHIRE BEE-KEEPER," appears so thoroughly satisfied of the correctness of his opinion, that bees are disposed to adopt the upper compartments of storified hives as their breeding place, that I must leave experience to convince him of his error, and in the meantime beg to shake hands and agree to differ with him.

Singularly enough, in the very article which precedes the one [illegible] reasserts this opinion, he recom[illegible] now in breaking [illegible] of storifying boxes [illegible] first [illegible] honey "store[illegible] [illegible] upp[illegible] not [illegible] ne tier of [illegible]," h[illegible] [illegible] this fact might have suggested to him, that no talismanic influence is required to induce our little favourites to obey the natural instinct which invariably prompts them to make their breeding place as near the entrance to their habitation as possible.

Whilst referring to this communication of our Renfrewshire friend, I venture to caution him and the rest of your apiarian readers, against over-estimating the advantages of introducing artificial food by pouring it into the combs from "a long-piped tin can." I believe that even pure honey will not keep unless placed in the combs by the bees themselves, and I am very sure that all artificial compounds require to undergo a chemical change in the stomach of the bee before they can be stored in the combs, in such a state as to keep good throughout the winter. I have often tried this experiment, and have constantly found that the food is immediately transferred to some other comb, during which operation the requisite chemical change is, doubtless, effected; but there is also the same amount of labour, excitement, and loss of weight (I am not sure that it should be called "waste"), incurred, as takes place when food is administered by the bottle.—A DEVONSHIRE BEE-KEEPER.

VARIETIES.

PROPOLIS dissolved in spirits of wine or turpentine has been used for varnishing tin and other polished metals, tinging them a lemon colour, and protecting them from rust.

THE PLANTAIN.—The first plant of Musa paradisiaca, large Plantain, that fruited in Scotland was in 1789 in the Pine-stove at Tynninghame, the seat of the Earl of Haddington. It had been long grown in a tub, and on becoming too large for the house was planted out in the bottom of the back pit. It flowered in course of the following summer, and produced thirty-two fruit which ripened to perfection, each being from 4 inches to 5 inches in length, and 1½ inch in diameter. Several species of Musa have been fruited in great perfection, both by the late and present Messrs. M'Nab, in the Royal Botanic Gardens. M. Cavendishii, on account of its dwarf habit and easy culture, is now grown in many establishments as a fruit-bearing plant. It is of easier cultivation than the Pine Apple, and since these have been imported in such numbers, the fruit of the Musa is now held in greater estimation, and, with Passiflora edulis, are the only tropical fruits which have been successfully ripened to any extent in Britain. A house is dedicated to the cultivation of the latter fruit in the gardens of the Duke of Buccleuch at Drumlanrig Castle, where many hundreds of its fruit are yearly produced.—(*Scottish Farmer.*)

OUR LETTER BOX.

LUMP IN A DORKING'S FOOT (*An Old Subscriber*).—It is probable the swelling arises from a thorn or a gravel stone that has pierced the skin of the ball of the foot and caused inflammation. If such be the case, poultice freely, and then open the swelling with a sharp knife or a razor. The foot during treatment should be wrapped in a piece of leather, and the fowl confined to a grass run. It may be freely opened by a cruciform incision, but it must not be removed.

BREEDING FROM CHICKENS (X.).—It would be impossible to say how the evil of breeding from chickens on both sides would show itself. The general result is, sickly and bad constitutioned produce; but it is not always the case. The fact that stronger birds are produced when the parent on one side is older induces those whose province it is to advise in such matters to recommend the adoption of such a selection.

WHITE FACE OF SPANISH COCKERELS (*Idem*).—Spanish cocks, nine months old, should be quite white over the eye. When caught and closely examined, there is sometimes a blush of red under the white over the eye. Where this is not visible to the eye at a few yards distance, we would not discard the bird; but if it be plain and decided red, we should have no hope of it.

PARENTS OF CHICKENS (*Idem*).—Much of the size of all chickens depends on their food and treatment when young. As a rule, we think we need hardly say, large birds are the likeliest to breed large chickens.

FOOD FOR HENS, &c. (*L. C.*).—No food will make an old hen lay in winter. Cochin-China pullets will lay during that season fed upon ground but undressed oats, which is the best food for all poultry, with a little whole barley occasionally. Our "Poultry-Book for the Many" contains all necessary information on the subject.

YELLOW FLUID FROM FOWLS (*B. W.*)—We cannot answer your question with any certainty till we know in what way the fowls were bled to death. We can hardly believe there is any mixture with the blood; the yellow fluid which you describe almost always exists in the crop of a fowl, especially after drinking; and if a fowl be held up by the legs, it will run freely from the mouth, and mix with the blood. If the fowl be bled in the palate, or if its throat be cut, and it is then held up by the legs, the mixture will take place, but the two are foreign one to the other. Fowls want nothing thrown on the grass in wet weather. Pollard and Indian corn or meal are not good food. Confine yourself to *occasional* potatoes, to lettuce, and to ground oats or barley; the former are the better.

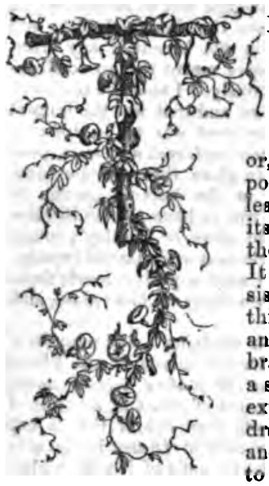
RABBIT, COLOUR OF (*H. V.*).—A self-coloured Rabbit is a Rabbit of one colour. Yours being white, gr[illegible] [illegible] certainly could not be [illegible]

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	DEC. 3—9, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
3	Tu		29.427—29.311	47—41	E.	.12	49 af 7	51 af 3	12 a. 5	1	9 54	337
4	W	Cape Heaths.	29.311—29.282	50—38	E.	.07	50 7	51 3	32 6	2	9 29	338
5	Th	Ceanothus azureus.	29.415—29.321	51—30	E.	.02	52 7	50 3	53 7	3	9 4	339
6	F	Chrysanthemums.	29.308—29.100	55—44	S.	.06	53 7	50 3	12 9	4	8 39	340
7	S	Polygala.	29.170—28.889	53—33	S.W.	.11	54 7	50 3	27 10	5	8 13	341
8	Sun	2 Sunday in Advent.	28.911—28.696	49—38	S.E.	.34	55 7	49 3	38 11	6	7 46	342
9	M	Heisteria.	29.105—28.854	51—31	W.	—	56 7	49 3	morn.	☽	7 19	343

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 52.7° and 39.6° respectively. The greatest heat, 60°, occurred on the 7th in 1856; and the lowest cold, 14°, on the 5th in 1844. During the period 114 days were fine, and on 124 rain fell.

PRUNING SHRUBBERY AND FOREST TREES.



THE woodman ought to be now busy with his knife, his axe, chisel, or saw in cutting off superfluous branches, shortening in such as are robbing the others of due support, or, in other words, balancing the powers of the tree, so that every leaf may have due space to fulfil its functions. This ought to be the grand aim of the tree-pruner. It is evident that pruning consists of two branches—namely, thinning the trees on the ground, and judicious pruning in the branches, so that there may be a sufficient number of leaves fully exposed to the sun and light to draw up sap to develope growth, and when the leaf is fully grown to concoct juices to deposit the albumen as it descends, which forms the wood annually, that increases the bulk of the timber.

To understand all this the pruner ought to know a sufficiency of vegetable physiology to appreciate the effect of too little or too much denudation of the trees he operates upon. How little this true science is understood by our woodmen, or even their head forester! Generally they are mere labourers who scarcely ever read a line on the subject, or ever think at all about the matter. They are directed to go into a certain plot of woodland and prune the trees, and the way they are to do it is to cut off close to the stem all the branches to a certain height. If thinning is to be done at the same time it is probable two or three will be directed to go before the others, and cut down such trees as are crooked, weak, or not likely to make good trees. This is done sometimes so severely that the cold winds have full play on the trees that are left—trees that had for, probably, many years been so protected by each other that now when so rudely and suddenly exposed to the cold winter blasts suffer so much from the sudden exposure as to require many years to recover strength to bear the change, and grow on again as they did before they were so stricken with cold. Then, to complete their discomfort, the pruners follow on and cut off all the side branches, leaving them something like brooms, or fishing-rods, with the sweeping part upwards. One would think no man with any brains at all would be so silly as to prune trees intended for timber in such a ruthless manner, yet it is, I am sorry to say, too frequently done. I have seen it repeatedly, and in parts of the country wide apart from each other.

The question naturally arises, How is a better practice to be attained? A thinking man will instantly exclaim, "Educate the men, put books into their hands, and see that the true principles of the art are explained to them by competent men. Good timber is of the utmost consequence to our country, and every true lover of his country will see the necessity of clothing the forests of the land with rising timber, that will as soon as possible make trees large enough for the purposes for which it is required." In a necessarily short essay, I have only space to give a few brief hints on this truly interesting subject.

The first point is to take care that the thinning and pruning are commenced when the plantation is young. The trees should never be allowed to reach more than from 6 feet to 10 feet high before they are thinned. This is often delayed in order that the thinnings may be made use of for rails, posts, and stakes. Never was economy more misplaced. All the evils I have just alluded to must happen: therefore I say most emphatically, Do not exemplify so absurdly the old proverb, penny wise and pound foolish. Thin your young trees before the branches touch each other, and do not thin them too severely in one season.

Let the thinning be done the season before the trees are pruned. The branches of the trees that are left will shelter the stems from the cold winds. The following season these branches should be shortened in. If done in time, the knife will, in judicious hands, be the only instrument required. In plantations that have been neglected for perhaps twenty or more years, it may be necessary to use stronger instruments, such as the chisel, the saw, or the bill-hook, but I trust the day will come when these tools will be banished out of the woodman's vocabulary, and be thought and found quite unnecessary. The following season part of the branches may be cut in close to the stem, and the rest shortened in again. My great object is not only to protect the stem, but also to leave these branches to be furnished with leaves, always remembering that it is the leaves that furnish the organisable matter to increase the bulk of the stem. Even large bushy-headed trees may be greatly improved for timber purposes by thinning the branches, and shortening in those that are left.

Young neglected plantations, such as may be seen in various parts of the country, require very careful thinning and pruning in order to bring them into a better condition. Though there are ten times too many trees it will not do to cut down at once the nine that are but cumberers of the ground. Instead of that severe treatment, I would recommend taking out not more than one-third this year, and then let the rest remain two years longer. Then go over the wood carefully, and take out one-third more of the worst trees, and so on, thinning them every other year, and pruning moderately the alternate years. By this gradual thinning and pruning the trees that are left to form good timber will be found sturdy fellows able to bear the strongest blasts, and finally become very tolerable trees, not indeed equal to such as have been trained up in their early youth, but yet worth ten times as much as they would have been had they been left unthinned, unpruned, and uncared for.

The preceding hints the reader will easily perceive refer to deciduous trees—such as the Oak, Ash, Elm, Beech, Larch, &c. Pruning evergreen trees—such as the Spruce, Scotch Fir, &c.—is a somewhat different affair. If these are pruned now they suffer more even than deciduous trees; I would, therefore, not prune them till March, and then it is particularly desirable to shorten in such branches as are intended to be removed entirely the season previous to their final close pruning. No branches on any tree should be allowed to remain on till they become large, because such large branches are so deeply inserted into the main stem that the latter is filled with knots just where the large branches were placed. Knotty timber, such as the Oak and Walnut, is sometimes, when sound, very valuable; but generally it is greatly inferior in value to such as is clean and straight.

The best season for pruning deciduous trees is decidedly winter—that is, from November to the end of February. If pruned later than the latter month many kinds—such as the Sycamore, the Birch, and Maple—bleed so copiously that the growth the following season is materially injured thereby.

T. Appleby.

DOUBLE-GLAZING—DISA GRANDIFLORA—MIMULUS CUPREUS.

Nineteen years since come next summer, the author of Rogers' conical boiler wrote to me from Sevenoaks, in Kent, to Shrubland Park, asking me what I knew of double-glazing hothouses, and informing me of a plan of doing so which he had in contemplation, and a most capital plan it was, and one that would do as much for the comfort of gardeners as his conical boiler did for those who could get coals which would not cake to burn in it. Rogers' conical boiler is still one of the best with uncaking coals; but for such coals as the Newcastle and others, which run together and "cake," as we call it, the conical boilers are not suited.

What he principally wrote to me for, anent his plan of double-glazing hothouses, was to ascertain, if possible, whether the idea was new or not; and I wrote to him to advise him not to say a word about it in print or in public, for the idea and the execution of it were just as old as the Empress Catherine of Russia. She was the first to take up the idea of double-glazing hothouses, and your humble servant was very probably the last person who meant to do his cubical vinery as the Empress Catherine of Russia did her hothouses. But Her Majesty was not the author of double-glazing for all that. The practice was common in all parts of Russia since glass was introduced into that country, and is so to this very day and hour. All the windows of all who can afford it all over the Russian dominions are double-glazed. Even in the warmest and most southern parts of the empire, along the coast line from Balaclava to the straits of Yinicale, our people found the windows double-glazed. The reason for double-glazing windows in Russia, is the fact that they keep out four times more degrees of frost than our windows do, which renders their windows as warm for their rooms as ours are to us and ours.

But double-glazing has been as common in our island of late years as it has been in Russia from the beginning, and yet some of our people talk as if it were a new discovery fresh from Paris or from America. Ask any of our people who have been down to see Balmoral, how the natives glaze their windows in Aberdeen, new and old Aberdeen. Or, ask any of the students who attended the Universities there for the last thirty years, how they escaped taking colds and sore throats when their bedroom windows faced the direction of Peterhead, their land's end in that quarter; and each and all of them would, should, or could tell the only bar against those occurrences was double-glazing; but that the Scotch boddies improved on the Russians by having double frames for their double-glazed windows.

If I recollect rightly, Mr. Rogers' idea of double-glazing hothouses was to have the houses all like as Mr. Rivers recommends so industriously. They were to be from 100 feet to 50 feet long and 24 feet wide, and glass all down to the ground [illegible], back, front, and both ends. All the laps were to be made perfectly air-tight, except the lowest next the ground, and that was to be open all the way round the house. Then if the [illegible] of the house or roof was ridge fashion, and not curvilinear, [illegible] contrivance to let the air move on or off to either side [illegible] as it listed, or rather as its different degrees of temperature determined, and all his upright glass at front and back, communicated with the roof glass in the same way; so that [illegible] double-glazing [illegible] the front or south side would rise, as it warmed, to the roof, and cross the ridge to the north side, and as it cooled gradually it sunk lower and lower, till at last it got so heavy as to fall out from between the glass on the back or north side of the house. That was to be in the fore part of each day. In the afternoon the current would change from north to south, and in dull weather there was to be little or no current at all. But always the hottest part of the enclosed air was to be at the ridge or top part of the roof.

Now, when I wrote about my vinery that was to be, I said a one-inch common draining-pipe was to carry warmed air from a warm air-chamber made under three lights at the end of a range, through that range or three thirteen lights, and then discharge itself into the vinery, as Mr. Kidd discharged hot air into the conservatory. But that was not exactly what was then in the wind. The upright walls of three sides of the cube vinery were to be 18 feet high, all in double-glazing; the fourth side existed already in brickwork, well covered with established Vines. The warm air from the drain-pipe was to be discharged at the bottom into the cavity between the double-glazing, and the three sides were to participate in the benefit, if any, from the warm bore-pipe, just as Mr. Rogers meant the air to circulate in his plan nineteen years previously. I said the plan was growing in my head for so many years, and that was the longest root of the whole system. But my roof was to be different from his roof—I was to have two span-roofs east and west, over the cube, and my first idea was to glaze them as the same kind of roof of a new storehouse in the botanic garden at Oxford was done in 1852, and that was to have the south sides of the ridged roof glazed with tinted glass, or Hartley's rough plate, and the north sides with the cleanest and clearest twenty-two-ounce sheet glass. That would save anything inside from the scorching which happens at times from all clear glass, and save shading.

I changed that plan last April on studying a fine plan for a grand conservatory which was sent for the opinion of the Floral Committee. That was the best plan for roofing a glass house of all the plans I had ever seen or heard of—that is, a house of large dimensions, and with more roofs than one, if that is not taking the roof off the meaning. My cube of 18 feet to the side was a fleabite to a big house, and yet the walls of it were higher than they are ever met with in vineries. The walls were to be in double-glazing, and the higher they were the more fit they would be for roofings, ridge-and-furrow fashion, as this new plan before the Floral Commitee was shown. These roofs were made as flat as they would carry off the wet, but not of much span, and the north side of each ridge was of wood ornamented; but the shade from those parts of the roof was shown not to affect the amount of light that entered the house and reached the plants in the smallest degree: therefore, such a roof could be made at less cost in the first instance, much stronger than the usual run, and a house so roofed could be more easily warmed, and kept warm at less cost than a double-glazed roof. Therefore, these considerations decided me in my choice of roof to the cube, which roof, as I have just said, was to be of two spans running east and west, the south side of the spans to be glass, and the north sides of wood entirely, and as plain as a cat's face—merely painted like the panel of a door.

Then, my calculation was this: If all this were to be done in the present fashion, it would cost much more than I can spare; and if it were to be kept at work in the usual manner I should not be justified in attempting it, for I could not afford to keep up that item in my bill of expenditure. But if I can do as much for £10 as some do with £20, and many more not under £30, it would be foolish not to do it, for it would more than pay, besides the enjoyment of the thing. The annual expense for firing, together with the interest of the cost price of warming and keeping warm by double glass round the sides, and wood for half the roof would be as ten would be to twenty, or even to thirty by the rail rout. And so I have done it all except the cube; but the money for it had to go where it was not then anticipated, and I must do with one side of the cube for another year, just as I have done with it ever since Capt. Hopkins beat me in out-door Grapes.

The pit with moist mild bottom heat from a common brick flue and glazed earthenware pipes, is now a fact accomplished. But there is one more side to the subject, the bottom side, and of all the things in this world that cocoa-nut refuse keeps bottom heat the longest, and yet no art of man can get it to heat [illegible] fermentation like [illegible] or leaves. But [illegible] heat it through and through with a flue under it, and it will keep warm and comfortable for ten days, may be for twenty; but I made a fire once in ten days, since I got it to go, and that has been enough. No one can have plants with less strength of constitution than some of my minimums are endowed with. My diseased plants, as many would call my spotted, blotched, and variegated seedlings, are Oaks and Chestnuts compared with the progeny from the puny stamens, and yet they, together with such Oaks and Chestnuts, are now looking as I like in that pit with mild moist bottom heat from a common flue, and if I keep them there free from hurt and harm through this winter, you need not have the slightest doubts against any plants under the sun being put under the same treatment for any winter during a lifetime.

The next account to settle this year, is that which refers to the lovely Disa grandiflora, from the top of Table Mountain, behind Cape Town, the "Cape of Storms," of early navigators. The account was not on cross-breeding it, like Nosegays this season, but for cross purposes the other way.

Well, I can call Dr. Lindley as a witness to prove to you and the rest of them, that Disa grandiflora was grown out of doors in England five and twenty years back. That it, then, astonished us of the old Horticultural Society, that this could be done, and that we prevailed on Dr. Lindley to cause inquiries to be made to teach us how to do the thing as well ourselves. Sir John Herschel was then two years home in London from the observatory at the Cape of Good Hope, where he observed more things than through a telescope, and amongst other things he observed the natural conditions under which Disa grandiflora flourished at the Cape, and not only it but other terrestrial Orchids, which are far more difficult to do here than the Disa. For the preceding two years Sir John Herschel had grown those very rare ground Orchids out of doors in his garden, Hanover Terrace, Regent's Park, and he exhibited some of them in full bloom before us in Regent Street, on the 16th of October aforesaid. The Disa was not then in bloom, but it was growing out of doors then at Hanover Terrace, Regent's Park, and "D.," of Deal, was right in suggesting the experiment and predicting the day when Disa would require no more than orchard-house protection in winter to cause it to flourish in the open air in England, in company with several kinds of the Cape Hæmanthi, and more particularly with Vallota purpurea minor and major, and with Tritonia aurea. The two latter inhabit the same regions under the same natural conditions as Disa. Vallota was the only true bulb found by Dr. Burchell growing in boggy peat at the Cape, and Tritonia aurea is as true an evergreen as Vallota and Disa, and just from the same cause from having its roots in marshy ground, "on the margins of pools," the year round.

The day is not far distant when Disa will be seen in the centre, with Vallota all round it, and both enclosed in a thick, natural-like belt of this Tritonia, on the margin of an English amateur's "lake," with a portable glass-case over them in winter and something "geothermal" to keep the water as they like it for the time, and to have their free liberty like British subjects for the rest of their days.

In the same Number of the "Floral Magazine" in which the Disa is pourtrayed, is another plant which is destined to elevate another family of flowers if it will cross, and it looks as if it would. This is a new dwarf and "perfectly hardy" Mimulus, of richer colour than any of the plain yellow ones already in cultivation. It was imported from the highlands of Chili by the Messrs. Veitch, with whom it stood out of doors scatheless last winter. It must be crossed forthwith with all the best-marked kinds in cultivation, to infuse hardiness into them by degrees, and by recrossing with this, which is named Mimulus cupreus, till the new strain is as hardy as the Musk Mimulus.

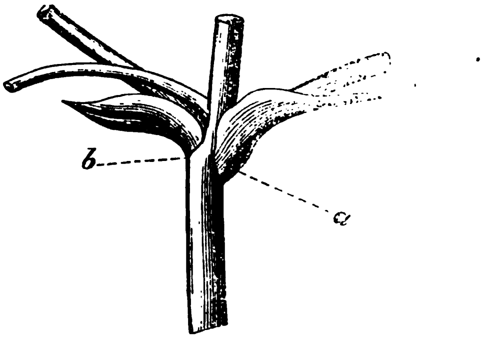
D. Beaton.

BLOOMING TACSONIA IGNEA.

I gather from an article in your Journal of November 12th, that there is some difficulty in blooming Tacsonia ignea. I, therefore, write to inform you that I bloomed this flower in the summer of last year, and was so dissatisfied with its appearance that I flung my whole stock on to the rubbish-heap. The plant was a seedling of three years old grown on the one-shift principle, in a No. 8-pot, and trained round stakes. The main shoots were a great many feet long. I bloomed Tacsonia mollissima at the same time, being a seedling of the same age, and grown in the same way. As I had no facilities for growing these flowers in a border, and there was no probability of their doing any good in pots, I thought it best to get rid of them, as I judged them not worth the time and trouble spent on them, and the space they occupied. Indeed, they were principally raised by way of experiment. The blossom of Tacsonia ignea was a bright cinnamon red, and in no respect answering to the "flowing crimson" of the leading seed catalogues. It certainly might not have been true, but considering the price charged for the seeds I can only say that it ought to have been.—Alfred Copland.

FRUIT-STALK OF THE STRAWBERRY ROOTING

AND BECOMING A FRUITFUL PLANT.



a Where roots formed. | *b* Where crown issued.

As you wish for more information about my little Strawberry plant I have made a rough sketch of the fruit-stem from which it was raised.

I had a plant in a pot which fruited well in June, 1860; after the fruit had been taken off I sunk the pot out in the border. One of the fruit-stems had been left on the plant. Towards the end of July I perceived two little roots growing out of the stem just where it thickens at the base of the little fruit-stalks. A small leaf was growing at this part, which is very common with the Sir Harry and other Strawberries. As I am fond of trying experiments in a small way I cut the stem off, and pegged it carefully in a pot with a hair-pin, and pressed the earth tightly about the roots. I then sunk the pot and kept it shaded, and was pleased to see in a short time other roots make their appearance; and, in about a month a small crown, close to the little leaf where I have drawn a line.

After my last communication I placed my little pet (which has been quite a wonder here) out of doors night and day to harden it; in a fortnight after I was surprised to see two large trusses of flowers make their appearance, which I cut off. It has now three large crowns and four smaller ones. I do not remember exactly where the runners grew, but I think just the same as in other plants.

This time last year this plant had one very small crown; in March this year it showed its first blossom truss, and has never been without fruit and bloom the whole of the summer, and would have blossom now if I had allowed it.

The first fruit-stem this year I tried to root, but I kept it too moist, and it damped off after putting down a root about an inch into the earth. Next year, if spared, I hope to have better success.—J. L.

THE GARDENS AND CONSERVATORIES AT DANGSTEIN.

(Continued from page 169.)

Leaving this division we enter the Palm-house, and at once find ourselves amongst the regal inhabitants of the torrid zone; or, as the immortal Linnæus has more properly termed them, "The kings of the vegetable creation." To attempt to describe all the rare and valuable objects here collected together would be vain; we will, therefore, only mention a few of them. Conspicuous amongst others are the Cocos Naia, and de Baban (Cocoa-nut Palms), the beautiful feathery leaves or fronds of the former reaching nearly to the roof of the building; Ceroxylon andicola (the wax Palm); The East Indian Wine Palm (Caryota urens); a noble specimen of the Hemp Palm of Australia (Corypha australis); Elias guianensis (the Guinea-oil Palm); Sebal Blackburniana, one of those mighty Fan Palms of the tropics; Chamædorea Erneste Augusta; Sestori elegans, and tepigilosa, the latter in fruit; the beautiful Livistonia Borbonica; Calamus rotang; Maximiliana regia; the Date Palm (Phœnix dactylifera); the Raphia tædigera, from Rio Negro and the alluvial banks of the Amazon; Seaforthia elegans; Thrinax argentea; the rare Geonoma macrostachya, and others. Here also is a noble specimen of the Cycas revoluta, or Sago Palm, the Screw Pine of China (Pandanus utilis); the Indian Rubber (Ficus elasticus), the branches of which, spreading over an immense space, reach to the roof of the building; the far-famed, and much-dreaded deadly Upas, or Poison Tree of Java (Antiaris toxicaria); two noble specimens of West Indian Tree Ferns (Cyathea serra), Ficus indica (the Banyan tree), Ficus Leopoldi, and others. Here also may be seen, growing as it were in its native luxuriance, the Banana (Musa sapientum), a fruit so much esteemed by the inhabitants of tropical climes. Their noble appearance and long broad leaves form an agreeable contrast to the Fern-like foliage of the Palms; they are planted out in well-prepared beds of rich compost, and when we state that some of the leaves have attained the length of from 12 feet to 14 feet, some idea may be formed of their luxuriant growth; on several of them we noticed some very large bunches of fruit rapidly approaching maturity. On the front stage of this house are placed the smaller specimens of Palms, &c, amongst which we must not forget to notice the Dion edule, Carludovica palmata, and the Vegetable Ivory of South Africa (the rare Stangeria paradoxa), a plant of which was coming into flower; also the equally rare Argania sideroxylon, the Argan oil plant. There are also many species of rare medicinal plants, and others seldom met with in collections. Before leaving this portion of the building we must not omit to notice two noble plants of Maranta zebrina, the beautiful dark-striped leaves of which measured from 3 feet to 4 feet in length.

But we are now about to enter the north wing, which is filled for the most part with Orchids, the larger specimens being placed on raised beds or stands of rockwork in the centre of the house, the sides are planted with different species of Ferns and Lycopods, which produce a very natural and agreeable effect. The Orchids consist of fine specimens of Cattleyas, Lælias, Brassias, Oncidiums, Odontoglossums, Dendrobiums, Brassavolas, Cypripediums, Peristeria elata, and many others; amongst which we observed a fine plant of Cœlogyne pandurata, from Java, the fiddle-shaped flowers of which are of a dull green colour, marked with ribs or blotches of black; a fine specimen of Cymbidium giganteum and sinense, and Dendrobium Chrysotoxum are also well worthy of notice; the latter is, indeed, a noble plant, measuring 2½ feet by 3½ feet; it has lately produced eighteen fine spikes of flower. In the centre is a large tank, over which is placed a fine plant of the rare Nepenthes Hookeri. Amongst the different varieties of Orchids suspended in baskets from the roof is a very fine specimen of Miltonia spectabilis, measuring nearly 8 feet in circumference; also good plants of Gongora cymbiformis, Houlletia Brocklehurstiana, Miltonia Clowesi, and others.

But what is this which has so suddenly attracted our attention, and fixed us, as it were, spellbound to the spot? It is a choice collection of the genus Anœctochilus, the small delicately-striped leaves of which surpass all others in the richness and brilliancy of their colours. Of this interesting and beautiful tribe of plants the Dangstein collection can boast of the following varieties:—Anœctochilus argenteus, argenteus pictus, Lobbi, Lowii, Lowii virescens, setaceus, setaceus aurea, cordatus and intermedius, Veitchi, xanthophyllus, striatus, querceticola, Roxburghi, and petola. They are grown in small pots, placed in an open framework in a case 12 feet long by 2 feet broad; a proper amount of heat and moisture is maintained—two points most essential to the well-being of this tribe of terrestrial beauties. The whole of this valuable collection, which numbers over three hundred individual plants, are in luxuriant health, and a high state of perfection; and they certainly reflect very great credit on the skill and ability of Mr. James Vair, the enthusiastic and intelligent gardener at Dangstein. We can only add that "to behold is to admire," and to the lover of plants a view of these alone would amply repay a visit.

In this house may also be seen some fine varieties of rare West Indian and New Zealand fi[illegible] Ferns, grown in large [illegible] smaller [illegible] bell-glass[illegible] this very interesting tribe of Ferns we observed the following:—Trichomanes anceps, pyxidiferum, rigidum, spicatum, crispum, Bancrofti, reniforme, and others. Hymenophyllum hirtellum, demissum, and polyanthos, a fine plant of the beautiful Todea pellucida of New Zealand, the transparent fronds of which measured nearly 2 feet in length; also the rare Riphdopteris peltata and Trichomanes trichtoideum.

Leaving these charming and interesting objects, we pass on to the east wing. Here are grown plants remarkable for fine and variegated foliage. It contains large specimens of Philodendron pertusum and pinnatifidum, Pandanus variegatus, Theophrasta macrophylla (coming into fine flower), Crinum asiaticum, Rhopala corcovadensis and De Jonghi, Croton variegatum and pictum, the Rice-paper plant of China (Aralia papyrifera), Aralia pulchra, Gastonia palmata, Ficus ferruginea, Aralia leptophylla, Carapa guianensis, and others. Also a noble specimen of the true Dragon's Blood (Dracæna draco). This plant was presented to Lady Dorothy Nevill by Mr. Skinner, who obtained it from the celebrated tree at Oratava in the Island of Teneriffe. On the front stage are placed smaller specimens of Dracænas, Marantas, &c.; also Sansoviera javanica, Hippomane spinosa, Ananassa sativa variegata, and others of equal beauty and interest. Different sorts of Passifloras and other beautiful climbing plants are trained to the entire roof of the building, the flowers of which, hanging in graceful festoons, produce a very pleasing effect. Stanhopeas and Acinetas are suspended in baskets from the roof, many of which were coming into fine flower. A fine plant of Acineta Humboldtii having eight spikes of bloom.

This large building is heated on Hayden's principle of hot water and air combined, and gives great satisfaction. A commodious potting-shed is attached to the building, under which is an immense tank for the reception of rain water, which is so beneficial to the growth of plants.

Bidding adieu to the regal inhabitants of "the tropics," we pass on to the greenhouse and fernery, a span-roofed building 103 feet long by 32 feet broad, and 16 feet high. We enter the greenhouse which was gay with flowering plants, consisting of Heaths, Epacris, Azaleas, Pimeleas, Eriostemons, Indian Rhododendrons, and other plants used for decorative purposes. Here, also, are some good specimens of Araucarias excelsa and Cunninghami, Camphor and Tea trees, Camellias, Oranges, &c. Of new and rare plants we noticed the beautiful Cassiope fastigiata, from the Himalayan Mountains, presented by Mr. Moore, of the Glasnevin Botanic Gardens, Dublin; and amongst other beautiful climbing plants trained to the roof is a fine plant of Lapageria rosea. Some beautiful New Zealand, Madeira, and rare British Ferns occupy a stage at the east end of the house. But we are now approaching the fernery, and here feel inadequate to the task of doing justice to a spot which may not inaptly be described as a "fairy land." The beds or stands for the Ferns are of an irregular or serpentine form, constructed of large masses of sandstone rock, as are also the back and end walls. These being covered with Ferns and Lycopods give it more the appearance of a natural cavern than a building erected so recently as 1855. The central columns or supports of the house are covered with ragged pieces of rock in which Ferns and Lycopods are placed; they have a very pretty effect, and the walks which are of rough gravel harmonise nicely with the whole. Of Ferns there is a rich and varied collection, consisting of Adiantums, Aspleniums, Polypodiums, Pteris, Lastræas, Davallias, and others. Amongst the more costly and valuable, are Cibotium Schiedei, the graceful fronds of which are from 10 feet to 15 feet in length. A noble specimen of Cyathea medullaris, that gigantic tree Fern of New Zealand, the fronds of which have reached to the roof. Large plants of Alsophila australis, ferox, and Mequeli, Cyathea arborea, Angiopteris erecta, Marattia elegans and cicutæfolia, Davallia diversifolia and aculeata, Litobrochia vespertilionis, Blautium culcita, Lastræa Kunzei, Hemitelia horrida, and others. Also, a good specimen of Todea Fraseri, and Odoutosoria tenuifolia. Some beautiful specimens of Drynaria coronans and morbilata are growing on large stems of Oak, around the knotted trunks of which the beautiful little Cynophlebium repens may be seen growing. In large pans suspended from the roof are fine plants of Woodwardia radicans, Nephrolepis davallioides, Goniophlebium inequale, latipes, and Reinwardti or subauriculatum, the latter suspended over a tank in the centre of the house, its gracefully drooping fronds reaching to the water's edge. Trained to the roof are some beautiful species of Lycopodiums. In this house also is a good collection of Selaginellas and Lycopods. Immediately at the back and connected with the fernery by large glass doors, is Lady Dorothy's museum. Here are collected together objects of curiosity and interest in the vegetable creation. There is also a very good assortment of works on botany and horticulture, to which, thanks to the liberality of Mr. Nevill and her ladyship, the young gardeners at Dangstein have free access. Here, also, is a book for visitors' names, and by its side lies another, titled "Plants in my Garden at Dangstein, 1854." This is an elegantly-bound volume containing a list of the Dangstein collection in 1854, it is beautifully written in illuminated characters by Lady Dorothy. Around the walls are portraits of distinguished personages. There are also some beautiful specimens of anatomised leaves prepared by her ladyship.

Retracing our steps we again pass through the greenhouse, where, before leaving, we notice a small case of Trichomanes radicans and Hymenophyllum tunbridgense and Wilsoni, planted on sandstone rock, and a continual moisture being maintained they grew luxuriantly.

Near the back of these ranges of plant-houses, is a pit for cultivating Heaths and other plants for greenhouse decoration, behind which in a shady wood is a hardy fernery, which during summer forms an agreeable retreat, and being tastefully arranged has a very pleasing effect.

We now pass Mr. Vair's residence, a neat and prettily-constructed building, situated near the east end of the principal range of plant-houses, and commanding an entire view of the kitchen gardens. At a short distance from this spot an aviary is being erected, which, when completed, will certainly form an additional attraction to "the gardens at Dangstein." From this spot a commanding view of the gardens and principal ranges of houses may be obtained. A broad walk runs from east to west fronting the principal range of plant-houses, and the ground which is formed on terraces, is bounded by a lovely valley which is now being formed into a kitchen garden, although it was originally intended for a pleasure ground.

Taking our route by the eastern side of "the old kitchen garden," we again reach the pleasure grounds, to the left of which is a beautifully shaded wood, which to the lover of rural retirement affords a delightful retreat.

Proceeding onward we again approach the mansion, to the south-west of which is a tastefully-arranged flower garden, joining which is "The Pinetum," containing good specimens of Araucarias, Cupressus, Abies, Piceas, &c. Leaving this we enter a spacious avenue of Cedrus deodara, which leads to the principal entrance to the mansion, and having almost reached our journey's end, we cannot leave this lovely spot and beautiful scenery without expressing our heartfelt thanks for the rich treat we have received; and, for the benefit of the readers of THE JOURNAL OF HORTICULTURE, we must add that Mr. Nevill and Lady Dorothy, with a truly liberal feeling, have kindly thrown open to the public their gardens and conservatories at any time (Sundays excepted). Free admission being obtained on application to Mr. Vair, to whom let us in justice again state that the greatest credit is due for the excellent order and arrangement of everything connected with the horticultural establishment at Dangstein.

With a fervent hope that long life and happiness may be granted to the noble owners who have devoted so much to the science of botany and gardening, and bestowing one farewell glance on a spot which must ever possess charms for the humble writer of these pages, we reluctantly bid adieu to "The Gardens and Conservatories at Dangstein."—W. G. P. G.

MUSCAT HAMBURGH GRAPE.

MY experience with this Grape is, I believe, more against it than you state at page 302 and 466. I planted one of the three-guinea Vines in August, 1858, which had one bunch in 1859, three in 1860, and five in 1861. I have grafted or inarched it on four Black Hamburghs, one of which had two bunches in 1860, five in 1861; and another of them had three in 1861. I also grafted it on a St. Peter's which had four bunches in 1861, in all twenty-three bunches, which did not all weigh two pounds when ripe; they set badly, shanked, shrivelled, and ripened very irregularly. I have also grafted two on a White Muscat, and one on a Muscat Muscadine.

I commenced forcing the 10th of December, 1859, and 26th of November, 1860. I believe the very fine bunch of it figured in "The Florist" was grown in a cool greenhouse, and those mentioned by J. Finlayson in an orchard-house, who, I think, is rather sharp upon you.

I am, therefore inclined to think it may not bear early forcing; and, as I do not intend to begin to force until the end of January, I shall in some degree be able to judge if that is the cause.

I hope your readers, &c., who grow this Grape will give their experience so that its true character can be known. My vinery has a span-roof, 50 feet by 12 feet 6 inches, roots all inside; the soil 2 feet deep, on flags which have a chamber under in which passes the flue from a cylindrical boiler, 5 feet by 2 feet, heating two rows of four-inch pipes laid side by side; the roof is double glass, 1½ inch apart.

The temperature here on the 16th of November was 22°, in the night previous; on the 17th, 20°; on the 18th, 14°; on the 19th, 17°; and at 9 A.M., 38°.—J. ECROYD, *Marsden, Lancashire.*

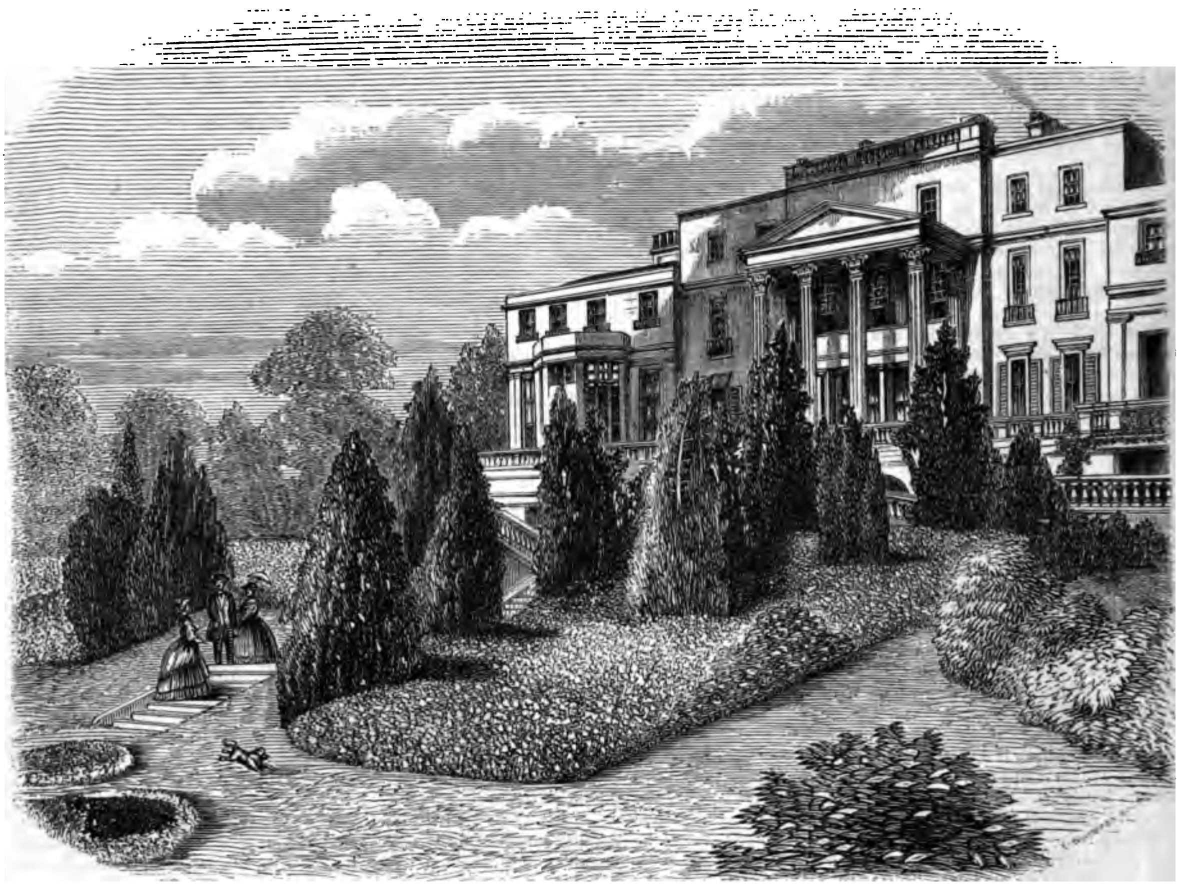
LINTON PARK,

THE SEAT OF LADY JULIA CORNWALLIS.

IT is at times difficult to account for the taste which placed some of the mansions of our nobility and gentry in positions so ill-suited to the comforts and requirements of its inmates. Some are inconveniently planted in a damp valley, while others are perched on the top of a hill, at once difficult of access, and exposed to winds from every quarter. In so far as gardening is concerned the former is certainly the more advantageous; but there are medium situations better, alike for a human residence and that of the vegetable world; and fortunately most large towns, as well as the private mansions of our nobility, are often placed on such situations—that is, sufficiently elevated to be out of the fogs and damps which hang over a low position, and not too high to have to endure the bleak cold winds and stormy blasts of a long winter. One of the class whose position is thus happily chosen is Linton Park, the noble seat of Lady Julia Cornwallis, and the "Ladies Cornwallis," which is placed about midway up one of those ridges of hill which divide the county of Kent into two unequal halves, the southern portion being that level district known as the Weald, and the northern, being more undulating, contains great variety of soil, aspect, cultivation, and general features. Linton Park, however, from its commanding position overlooks the greater part of the Weald of Kent (a district famous for its Hops), the view from the mansion extending east, south, and west for twelve or fifteen miles unbroken by any intervening object, and some distant objects of twice the above number of miles are also visible. Still the situation cannot be called an uncomfortably high one; the ground at the back of the house rising quite 100 feet above the top of it, giving it the appearance of snugly resting on the side of a hill nearer the bottom than the top, yet some 100 feet or more above the valley below. The ridge on which it stands extending east and west for several miles in both directions, forming, what is called in homely language, "the backbone of Kent." The country round seems to be mostly orchards and Hop gardens, and being mostly spade cultivation it is needless to say evinced a high state of management, supporting the idea so often put forth that Kent is the garden of England.

The road to Linton from Maidstone (four miles) is hilly "Kentish rag" stone appearing in most of the cuttings, through which an excellent turnpike road runs, and the pleasant and romantic village of Loose, with its paper mills and village church nestled in a deep valley, has a pleasing appearance. An aged Yew tree in this churchyard in excellent health has a trunk 33 feet in circumference at the narrowest part between the root-forks and the limbs, and though hollow, in fact a mere shell, it still promises to outlive many generations of worshippers who weekly pass under its shade. Further on we come upon what in former days obtained some celebrity as the head quarters of several thousands of men who for some time were encamped upon it to repel a threatened French invasion. The Cox Heath, however, of those days is now a smiling district of orchards and fields, and dwellings devoted to more peaceful occupations now occupy the site of the bleak waste; and let us hope that a similar assemblage of armed men may be never wanted again.

The entrance to the park, by a neat and commodious lodge, is on this elevated region. The park at this entrance for some distance having more the character of dressed ground, clumps of shrubs and ornamental trees being studded about. But before descending the hill leading to the mansion the carriage road enters a noble avenue of Beech and Elm trees, the lower portion being of Elm of two continuous rows on each side; the inner rows being 90 feet apart, and yet at that ample distance their tops have met. This avenue is perfectly straight, and points to the mansion; but the descent at the lower end nearest the house being so great, the carriage road winds round by one side. The carriage road is on the north side; but another road from an opposite direction also meets at the same place.

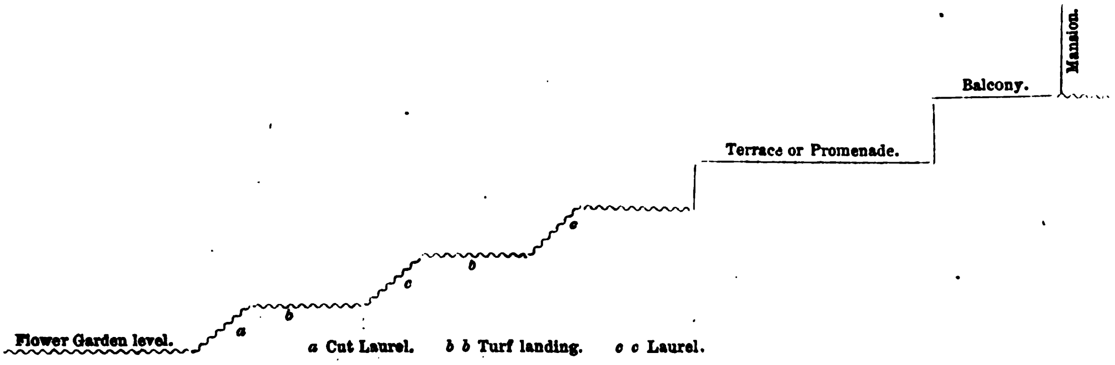


The mansion is one of those commodious Grecian structures combining all the advantages of inside comfort, with a pleasing exterior of a light stone colour, which shows to great advantage amidst the mass of foliage by which it is surrounded. The south front presents a façade of 150 feet. The north side, communicating with the offices at the north-eastern corner, is considerably longer. A gravelled terrace 30 feet wide extends along the south front, and, returning at both ends, encloses a large area at both the east and west sides. This terrace is bounded on all sides by an ornamental balustrading, and, it is proper to remark, is overlooked by a balcony above running the whole length of the mansion, which is also on a level with the drawing-room floors and the north entrance, the declivity making about 12 feet difference on the two sides of the house. Still the grounds rapidly descend to the south, and a succession of slopes and landings carry us down to the terrace garden immediately to the south of the house. The descent from the gravelled terrace to this garden being about 28 feet, in four stages, the upper one being a perpendicular wall surmounted by the balustrading alluded to; the other three being slopes requiring respectively ten, nine, and thirteen steps to descend to the basement. The flight of steps, 15 feet wide, descends in front of the centre of the house, the top flight alone diverging right and left, as is usual on such places.

These slopes, which form so important a feature in the place, are partly clothed with Laurel cut to the exact shape of the mounds, with Cedars and other symmetrical-growing trees rising amongst them at regular intervals. A portion, however, on both sides [illegible] s o [illegible]; and the whole of the [illegible] and [illegible] occupied by the steps and [illegible] landings [illegible] fig. 1, conveys some [illegible] steps and landings are necessarily concealed by the Laurels. Half-hardy creepers and other ornamental plants are trained against the terrace wall; and a border of Yuccas at the base of this wall is not the least important feature in the place, as we have been told as many as a dozen have been all in flower at one time, and each of them from 8 feet to 10 feet high. It is needless to say this has not been the case the present summer, but may possibly be so next year.

Westward of this terrace garden is the rosery, which will be described hereafter, and with some shrubbery the grounds terminate in this direction; but eastward they extend for a considerable distance, the inclination of the ground being still to the southward, though less steep than immediately in front of the mansion. The most eastern portion of the grounds being the pinetum, where some noble specimens of Deodars, Pinus insignis, ponderosa, cephalonica, and other kinds, scarcely to be excelled anywhere, are in excellent health; but other flower gardens, to be described hereafter, form an intervening feature, the basket garden, being one; and a walk which crosses the grounds in a north and south direction, taking in a fountain in its course, and having six distinct flights of steps in its ascent, terminates at the top in a Dutch garden, of which a figure has already appeared in our last Volume, page 101. A conservatory forms one side of this garden, and at the back of this is the kitchen garden, with some vineries and forcing-houses against its north wall; and behind these again the pits and frames, so essential to a garden where flower gardening is so extensively carried on, and where the requirements of a family have to be attended to.

Our engraving (No. 1) is a north-west view of the mansion and terrace, the slopes of the latter being covered with Laurel cut to the same shape with some Cedars occupying the corners and other places amongst the cut Laurels, conceal the broad flight of steps in the centre, or nearly so, but the balustrading is shown in places. Perhaps, however, the annexed section will convey the best idea of the slopes and levels.



a Cut Laurel. *b b* Turf landing. *c c* Laurel.

It is proper to remark that the banks of cut Laurels here shown, have an opening in the centre for a broad slope of grass on each side of the steps. The slope at the steps is backward in a sort of fancy curve, so that the lowest ste

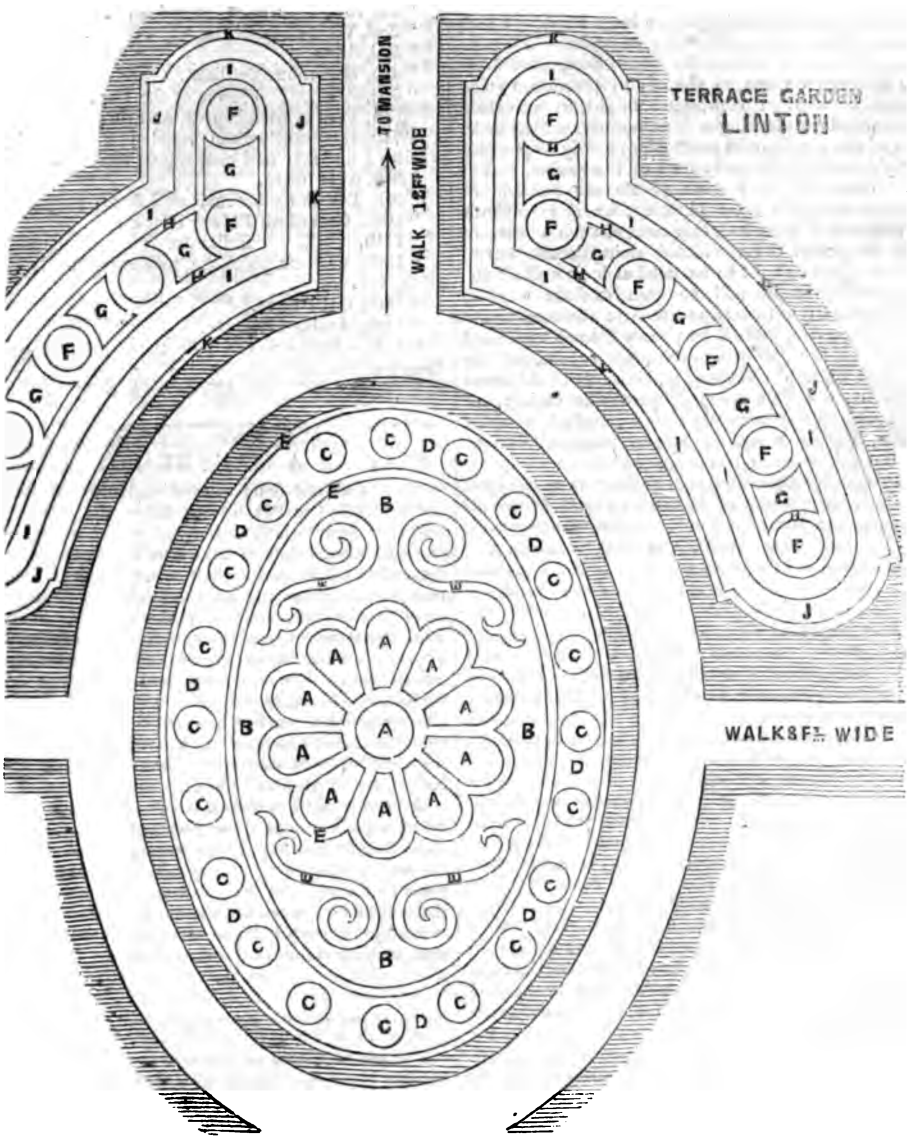


Fig. 2.

so forward by several feet as the base of the lowest Laurel-bank. This accounts for so few steps being seen. The ends of these Laurel banks are all cut square, and in a line with eac The ground at this point taking the character of an plane leading to the bottom, instead of the slopes and landings, the basement forming the first flower garden, *fig.* 2, being nearly level, is about 160 feet square. The centre bed, an oval, being 90 feet by 68 feet, or exclusive of the grass margin it is 84 feet by 62 feet. A large place to fill entirely with flowering plants. The side beds are 22 feet wide, and the two ovals in proportion.

Below this garden, or to the south of it, the ground falls about 4 feet by another grass slope, and beyond this it inclines still further to the southward, where a ha-ha wall separates it from the park. This second basement is also occupied as a flower garden, but the beds are not so large as those in the upper part, as shown in the figure, but two beds planted as striped borders pointing towards the house were 17 feet wide, the other beds, however, were smaller, and all were in full view from the mansion and terrace above.

Of the planting of the large central bed in the upper garden, Mr. Fish reported very favourably on in the autumn of 1859, and a design showing the manner in which it was done that season, as well as the winter design for colouring it with different materials, and we are told a fresh one is supplied every year, and when we saw it in August nothing could well look better, and at our request, Mr. Robson has given us the following ideas relative to the planting and managing of so large a space, which we give in his own words.

"In planting so large a space as the one in question, two or three objects must be kept in view, that might, in a certain degree, be disregarded in planting a number of smaller beds. First, the whole of the plants used must be as nearly as possible of a uniform height, both in the early part of the season, and at the end of it. Secondly, only such plants are suitable as require little or no attention after planting, for it is difficult even with the greatest of care to get amongst such a mass of plants to dress or prune them without doing much harm. Thirdly, only such plants ought to be used as look well all the season. These conditions it will be seen exclude a great number of plants generally esteemed as amongst the most ornamental of the flower garden, and of late years I have restricted the planting of it to the following—viz., Geranium, of the scarlet variety (Tom Thumb); Geranium, variegated; Alyssum variegatum; Lobelia, a strong-growing, pale blue variety, of great endurance; Calceolaria aurea floribunda, and occasionally Verbena pulchella, Purple King, or a plum-coloured variety called Ariosto; but this season no Verbenas have been used, and I see no reason to wish for them again, excepting as a changed crop, and of the respective merits of the plants named I have no hesitation in saying that Tom Thumb Geranium, and Alyssum variegatum, are the two most useful, and next to them the Lobelia and Perilla nankinensis ought all to be used. I planted it extensively on the side beds with good effect, and regret not having some of the stringwork of the large bed of it the past season. These four plants I have no hesitation in placing as first on the list of useful ones, and next to these Calceolaria aurea floribunda. As a yellow it is exceeding useful, but it is not such a continuous bloomer as the Lobelia; nevertheless, it ought always to have a place.

"The design of the present year is certainly not the prettiest that has been planted, but as a change is wanted each year, it was adopted, and the plants have done well. The Calceolarias which at one time were the most gay things in the bed, failing first. It is also proper to remark, that in consequence of not having enough plants of Geranium Tom Thumb to plant the outer groundwork and central compartments, the latter were planted with Geranium Trentham Rose, which became a little too late for the Alyssum. This may be called the greatest defect in planting. The scrollwork of Alyssum kept pace exactly with the Lobelia, which formed the ground to it, and Geranium Tom Thumb was also the same height. If, however, we had had the good fortune to have planted Perilla as a stringwork to separate the central compartments, the effect would have been better, as that plant looked exceedingly well used in a similar way in the side beds.

The large side beds, 22 feet wide, were with alternate circles [illegible] panels in the centre, and strip[illegible] the outside of Tropæolum [illegible] and Mangles' Varieg[illegible] [illegible]eranium, the stringwor[illegible] [illegible] [illegible]nded the ci[illegible] [illegible]ng of Perilla, con[illegible]ted [illegible] [illegible]ything el[illegible] [illegible] much admire[illegible] [illegible] [illegible] [illegible] be give[illegible] [illegible]llowing particular[illegible] of th[illegible] [illegible] [illegible] [illegible]

"LARGE CENTRAL BED.

"A. Ten wedge-shaped, and one circular compartment, Geranium Trentham Rose.

"B. Groundwork surrounding the above a light blue Lobelia, of strong growth.

"C. Twenty circles of Calceolaria aurea floribunda.

"D. Border of Geranium Tom Thumb surrounding the Calceolaria circles.

"E. Alyssum variegatum forming an outer edging, and all the inner lines of stringwork also dividing the central compartments, making the scrolls on the Lobelia groundwork.

"SIDE BEDS, BOTH ALIKE.

"F. Twelve circles of Calceolaria aurantia multiflora.

"G. Ten panels or compartments of Horseshoe-leaved Geraniums (scarlet-flowered).

"H. Stringwork dividing and surrounding the above of Perilla nankinensis.

"I. Band 2½ feet wide of Geranium Mangles' Variegated.

"J. Band 3 feet wide of Tropæolum elegans.

"K. Outer edging, Alyssum variegatum.

"There were two more tolerably large beds in this garden, but their planting did not present anything remarkable. The next important feature being two broad beds on the second basement, with a glade of grass 12 feet wide between them pointing to the centre of the mansion (the same as the large oval alluded to). These beds were each 17 feet wide, and were planted on the span-roofed principle of the ribbon-border, thus, beginning at one side.

"1st row, Cerastium tomentosum.
"2nd, Verbena pulchella } making a band 2½ feet wide.
"3rd, ditto }
"4th, Geranium Brilliant.
"5th, „ Flower of the Day.
"6th, Perilla nankinensis, and dwarf Dahlia Zelinda, mixed.
"7th, Chrysanthemum regale; a double yellow-flowering variety; an early and continuous bloomer.
"8th, ditto ditto.
"9th, Perilla nankinensis and dwarf purple Dahlia.
"10th, Geranium Flower of the Day.
"11th, „ Brillante.
"12th, Verbena pulchella, making with the next row a band of 2½ feet.
"13th, ditto ditto.
"14th, Arabis variegata.

"N.B.—In the mixed row there were three plants of Perilla to one of dwarf Dahlia."

(*To be continued.*)

SALT AS A MANURE FOR PEACH TREES.

This is a most dangerous stimulant, often deadly, and should not be applied to Peach trees unless the soil is a blowing sand, and then some other means had better be resorted to, to make the soil firm. Salt is injurious to Peach trees, by prolonging their growth, so that in November they are likely to be covered with green leaves and immature shoots. Peach and Nectarine trees like a solid soil. In the case of your correspondent who seems to have a dark, porous, friable soil, if the trees appear to want vigour, he should fork in a dressing of rotten manure—say 6 inches deep, and then on a dry day ram the surface of the border with a wooden rammer. After this he should give the surface a slight dressing of manure, and never touch it (except to hoe off the weeds) till next year, when a ramming without stirring the border may be given, and manure laid on the surface as before.

A border for Peach and Nectarine trees should be solid, and never stirred, unless it be poor, so that the roots of the trees require some manure. This annual ramming of the surface of the soil of Peach-tree borders in light, porous soil, should take place in March, a surface dressing of manure then applied, and the border kept clean with the hoe. I need scarce add that no cropping of such borders should be thought of. Their width may be from 6 feet to 8 feet.—Persica.

THE CAMELLIA AND ITS CULTURE.—No. 1.

We have nothing in our greenhouses so universally admired as the Camellia. China and Japan have furnished us with many things of surpassing interest and commensurate value in a commercial point of view; but no subject yet introduced, horticulturally speaking, has had that round of success, unless it be those glorious bouquets of gorgeous Azaleas, which, as specimens [illegible] beauty, are unsurpassed, but as individual blooms are very much inferior and far less serviceable for decorative purposes than the

Camellia. On all great occasions the lady portion of the community, if they had a choice, would say, "Oh! if it is not too great a favour for me to solicit, I would prefer a white Camellia bloom to all the other flowers in your greenhouse. I don't profess to say that it is equal to your fine varieties of Cattleya labiata, or Lælia anceps, or even a single bloom of the lovely Phalænopsis; but these are only at the command of those who indulge lavishly, and who have ample means to second that love for the beautiful in Nature which engages my sympathy and admiration, although beyond the powers of my purse to cater in. I have learned therewith to be content with far humbler examples than those referred to, and chief among my favourities are the various tints of the Camellia."

I fully enter into the spirit of this lady's remarks, and although my sympathies and likings are pre-eminently orchidaceous, still I rejoice to cultivate (and who does not?) and watch the progress of a superb collection of this lovely species. I can yet well remember how fascinated I was at seeing a small collection of these in bloom for the first time; and on many occasions since I have watched with curiosity and pleasure the effect produced upon the minds of individuals placed in similar circumstances. There is a love for the beautiful planted in our natures which grows in intensity the more we become familiarised with vegetable physiology. Is it not a remarkable fact, however, that all students who dip deep in any science or art have often their actions misconstrued? Point out to me a first-rate botanist or a first-rate entomologist, or a first-rate in anything, and you will see at once that his assiduity and enthusiasm are set down by the unsuccessful and uninstructed in these matters as a species of paradox and absurdity. I could point out to you a few gardeners who have seen, so to speak, two or even three generations pass away, and yet they are as keen and enthusiastic now in the art as they were when apprentice boys. It is to such gentlemen as these, imbued with the spirit of progress, and ever ready to inculcate from their fertile resources golden ideas into the aspiring juvenile mind that horticulture mainly owes its progress. So far so well. May such a state of things long continue to go on and prosper.

There is nobody, and I say it advisedly, who has a small greenhouse but can have good Camellias. Like all other things, however, the better accommodation at command the better specimens of skill can be produced. The great majority of the well-to-do in this country, and no country upon the face of the earth can boast of so many hives of industry among all classes, cannot afford to have large glass erections: therefore, the difficulty for the gardener, or the man who is expected to have a knowledge of the profession, is proportionately greater, according to the ambition and requirements of his employer. It would be the height of vanity for a first-rate gardener to tell a lady or gentleman that with his or her limited accommodation he or she could have first-rate examples of Grapes along with a miscellaneous collection of plants all huddled together in one house. It is not an uncommon observation for ladies and gentlemen (for we have heard of such both in England and Scotland), who are partly excusable because they have no special knowledge in the carrying out of these matters, to descant upon the time and material that their servant can devote towards the successful cultivation of the Vines and other plants which their greenhouse contains, and yet not attended with that success which they were led to expect when first embarking in the speculation. The error, on close examination, is often detected in the endeavouring to carry out too much with too little appliances. The remedy is obviously apparent in the curtailing the multiplicity of subjects, or adding to the glass erections.

We have no wish to damp the ardour of those who have embarked, or are intending to embark, in such a speculation. We only wish to check exorbitant thirst for variety, for the benefit of both servant and served. But let me tell you honestly that it requires no ordinary vigilance in studying cause and effect, before you can be thoroughly successful with mixed variety, and, doubtless, many of the readers of THE JOURNAL OF HORTICULTURE can echo my sentiments in this respect, and all the more readily appreciate and admire the fertile resources and ofttimes happy conclusions of the gentleman who is more immediately connected with this department.

We intend to discuss the culture of the Camellia under the following heads—Soil, Habit, Temperature, Moisture, Varieties, Propagation, and, lastly, its adaptability for, and treatment amongst mixed collections, as implied in our introductory remarks.

SOIL.—There is no such thing now-a-days as great varieties of compost intermixed to form a harmonious whole, for the well-being of specific subjects. Neither is there any arbitrary colour or shade in the great variety lying on the crust of this earth to warrant us in assuming that that colour only possesses the efficacious occult power of promoting the healthy development of a given species of plants. If there be such a thing as a latent tendency in the mind of the amateur leading in this direction, we would point at once to the varied character of the fields over the length and breadth of this country, each producing, with proper treatment, ample crops of Wheat and Barley in the one instance, and Potatoes and Turnips in the other, to justify our hypothesis. Chemistry has opened our eyes widely in this direction; and the conclusions derived from this analysis are fortified by the actual experiments of practical men and first-rate cultivators who knew how to promote healthy development, contemporary with the earliest students of agricultural chemistry, and know still how to do so without the slightest smack of the theory of the science.

It was a practice, however, not altogether obsolete at this day, for some to put their various composts through a half-inch riddle, so as to have the soil they intended to repot with as comminuted as possible; whereas now, in most cases, that is exactly the soil that is laid at one side to be used only, if at all, for pot culture on rare occasions. We have learned by experience that the atmospheric air in the soil is the most important and subtile component of it all towards maintaining perfect development and mutual reciprocity between the root and the branches. We have learned also that gradual decomposition of extraneous nutriment tends greatly to facilitate a healthy power of action, and produces a greater yield in a given space, than allowing such nutriment to be too far decomposed, and its ammonia dispersed before appliance. Indeed, practical gardeners, unacquainted with chemistry, are at a loss exactly to state how much per centum of success may be attributed to the one, as against the other, where both are introduced so as to act in harmony with their ideas.

The most intelligent and persevering farmers are fully alive to the importance of a thorough aëration of their fields; and they are all setting about industriously to propagate a desire among their fellow men to have their land deep ploughed, "heavily subsoiled," to use their expression, because they have seen and know by results the value and profit of the experiment. They are calculating that by adopting this method they will have so much less per-centage of manure to provide, and even some in their enthusiasm declare that there will be little, if any, need of surface draining where this is adopted. In fact, they calculate that no land is in first-rate order unless it has for a depth of 12 inches one-third of that body composed of air.

We are fully satisfied that their views are correct in this respect, and we would submit, if it is necessary, to have one-third of the component parts of land composed of air which requires little, if any, artificial watering to clog up the pores. It is absolutely necessary for the well-being of plants in pots to have at the very least no less of that element. These being our views we make our general selection of composts in accordance with, the particular kind we use with success for the Camellia will be given in another chapter.—JAS. ANDERSON, *Meadow Bank, Uddingstone.*

AUTUMN-BLOOMING CYCLAMENS.

WHAT is the name of a variety of Cyclamen which I have, and cannot identify by the description given in any list or catalogue to which I have access? It blooms in September, the flowers are of pale lilac colour, with darker centre, and the leaves do not appear until the flowering is over and the seed-pod formed, which, as in the case of coum is enveloped in the spirally-twisted flower-stalk. I ought to add that the foliage is very handsome, the handsomest of all, and not round like that of coum and persicum. It (the flower) has no scent.—A. C.

[You do not state whether your Cyclamen is in a pot or in the open ground, hardy or not hardy. All the information in one's power should be sent when a plant is inquired about, or a specimen is sent for identification. The way to answer you and many others, however, about these Cyclamens is very simple.

Two kinds of Cyclamens only bloom in this country in the autumn, and no two kinds were ever more confounded the one with the other, and both are perfectly hardy. Yours must be one of them, and is out in the border from year's end to year's end. The two kinds are quite as different in leaf and looks as a gander is from a turkey cock. You say "the foliage of your Cyclamen is very handsome, the handsomest of all, *and not round like that of coum or persicum*," and we put the italics to show the difference between the two kinds of autumnal-blooming Cyclamens; the one has the leaves just as round as those of coum: therefore that one is not the kind you have; and the question is answered, for it must be the other.

Cyclamen europæum and Cyclamen neapolitanum are the only two which bloom in the autumn, and europæum has the leaves more round than any of the persicum race, and nearly quite as much so as those of coum: therefore it cannot be your plant. Yours is, undoubtedly, the Cyclamen neapolitanum of old Tenore, and of our best botanicals; but it has more names—as autumnale, purpurescens, Poli, and hederæfolium, and it is more hederæfolium-like than most of them; but there is a very different kind to which the name hederæfolium (Ivy-leaved) was first given, and that kind blooms in the spring after the persicums, the coums, and the Atkinsii are all over; and never does it bloom in the autumn. There are, therefore, in cultivation two kinds called hederæfolium, a spring-flowering hederæfolium, which is the true kind, and the autumn hederæfolium, which is the neapolitanum, which is yours, and which you say is "the handsomest of all" in the leaves. Mr. Weaver, at the College, Winchester, has some rare old stools of this handsome Cyclamen, and Mr. Beaton, we hear, wants both kinds which are indifferently called hederæfolium.]

SHORTT'S PLAN FOR THE PREVENTION OF THE POTATO DISEASE.

I PROMISED to give a few notes on the issue of our trial of this plan, and I now attempt to do so. Before going into our experiment it would be wise to give the letter in full, as read before the Council of the Royal Agricultural Society in February last:—

"As soon as I perceive the leaves of my Potatoes to be tainted, I immediately cover them entirely with earth, leaving the roots high and dry, the ridges being not less than 30 inches apart. The consequence is, that every tuber remains perfectly sound, without spot or blemish. I do not pretend to explain the cause of this, which, probably, may arise from the exclusion of atmospheric influence as well as moisture; all I beg to draw attention to is the effect. I am at present digging as fine and as healthy Potatoes as I ever grew, whilst a considerable portion of some which were sown only a few feet distant, but not earthed up, I found to be decayed and useless. This mode of treatment is equally applicable to every variety of Potato, and every description of soil. I have tried the experiment in fields as well as in gardens, and with the same invariable result. In 1856, having to plant two acres of Potatoes in a stiff clay soil in Norfolk, I had them ploughed in with a common plough carrying 10 inches to the furrow, leaving the rows 30 inches apart. This was done the third week in March. After the Potatoes were well up, they were hand-hoed, and kept clean until the beginning of June when they were all earthed up with a double-breasted plough; and in the middle of July, 'Howard's Patent Plough' was used to take a single furrow from between each row, laying the furrow-slice on the top of the rows. In order to test the efficacy of the method, I left some of each variety of the Potatoes uncovered by the earth. On taking the crop up in October, I found every tuber of those which had been covered in the way I have described quite healthy and sound, whilst the half of those which had not been earthed up were diseased and entirely useless, thus showing that the Potatoes only partially covered were affected by the disease, whilst those entirely covered, and, as I said before, lying high and dry, remained untouched.

"DIRECTIONS.—The Potatoes, as I have said before, should be planted 30 inches apart from row to row, and 6 inches from set to set in the rows, and be earthed up in the usual way; nothing further is required until the first appearance of the disease in the haulm, when the tops of the Potatoes must be laid on one side of the ridge, and then with a spade take 6 inches in depth of soil from betwixt the ridges and place it on the plants laid down, and so go on ridge by ridge until the whole are completed; by which means there will be a trench between each row of Potatoes, 6 inches below the tubers, which will be left high, dry, and perfectly sound, all moisture being carried off. As to the expense, which some persons have stated would be greater than the gain, by this plan, I think it right to mention, that the extra labour would be about 2*d*. per perch. or Devonshire yard. It has been already stated that the plan is equally applicable to the farm as the garden, the only difference is, that one is done by manual labour, and the other by horse labour, which any good ploughman can do with a little practice; the first earthing up with a double-breasted plough, the second with a single-breasted one; laying the furrow, which is taken from betwixt the ridges on the top of the ridge of Potatoes; hereby there would be a saving of expense, as a man with a plough and pair of horses would be able to do two acres a day. [illegible] the plan I have found invariably to answer will be generally tried another season, as I am confident a great saving would thereby be effected in the food of millions!—LEONARD SHORTT, *Gardener to John Mildford*, [illegible] *Coarer, Exeter*."

[illegible] the appearance of this in *Bell's Weekly Messenger*, my employer M[illegible] Sanday, of Holme Pierrepont, was so impressed [illegible] of the idea, that he gave me full instruc[illegible] that i[illegible]ed out in its entirety. [illegible] following days, we had them put in 30 inches from row to row, and from 12 inches to 15 inches from set to set (6 inches are too near we think). We always choose a piece of good land on our light soils for Potatoes, and this year it was a piece of very gravelly—there is a gravel-pit in the close. We planted Regents, Flukes, and Cockneys. All went on well till July. In the first week the disease made its appearance on some cold, heavy land in the neighbourhood; but not a symptom on ours till the last week, then those peculiar black spots began to appear on the foliage, and on the 30th we put two men on the job, and as it was something new I went to superintend their start. Then came the question, How are we to do this? and I at once laid down the law, that the tops must all be covered. I insisted on it, that that was the reading of the instructions. I had not the copy of the letter by me, and only remembered its details from my reading it four months previously. I knew he said, "Cover them entirely with earth." This was rather a slow and by no means a nice job, as, to cover the tops entirely with earth, the men had to twist them hayrope fashion, on the centre of the ridge, and then put the earth out of the furrow over that. Mr. Sanday was not at home when the men begun, but he came home the next day, and on his returning from the close where the men were at work, came to me with a most amused face and said, "However could you think that that was the plan?" I said, "How would you cover them entirely with earth otherwise?" "Oh! it does not mean so," he said, "it means, bend the tops down on one side of the ridge, and put the soil out of the opposite furrow on the top of the ridge, leaving the tops uncovered." "We'll see." I got the paper with the letter in, and we conned it over, and on a first look it does appear that all must be covered up; but afterwards it seems to bear out Mr. Sanday's construction, yet nowhere does it say precisely that any part of the top is uncovered. We at last agreed that part should be done to Mr. Sanday's reading, and part according to mine. So, then, one-half (No. 1), was done by simply bending the tops over the side from the workmen, and putting a spit of earth out of the furrow on the top of the ridge. One-fourth done my way (No. 2), the tops twisted along the top of the ridge and earth put over them, covering them completely. One-fourth (No. 3), left untouched in consequence of the men being taken off harvesting. August came in fine and dry, it arrested the progress of the disease, and on the 14th during a temporary lull in harvest, we decided to take up No. 3, as they were ripe, at least the tops were. On this piece of ground we had at the rate of 130 sacks to the acre or thereabouts, fine, clean, healthy tubers, very few diseased ones, and not many small. On September 20th, afraid lest the weather should come wet and cold, we had the other pieces, Nos. 1 and 2, taken up. No. 1 were not so fine, not so clean and healthy as No. 3, and there were more bad ones and considerably more small ones. The nearest computation that we could come to was about ninety-eight sacks to the acre. The produce of No. 2 grew "small by degrees and beautifully less," for they became smaller in size with more diseased ones; something like seventy-four sacks to the acre.

The experiment then failed, and that which contributed most was the wet weather of the early summer, so that when the soil was put on the ridge, it sealed them up as it were in their moisture, and prevented them benefiting by the dry fine weather of August. Had the weather kept on still wet, as some of us dreaded it would, the experiment might have been successful; but could we only have a recurrence of the same fine weather, and at the same time as this year, we should not need to put in practice any of the thousand and one precautions for the prevention of the disease which are so strongly and lavishly recommended to us.—N. H. POWNALL, *Gardener to William Sanday, Esq., Holme Pierrepont, Nottingham.*

[illegible] THE LARCH A DOOMED TREE?

[illegible] any of your subscribers afford me any information [illegible] the probable cause and cure of this terrible blight, with which the Larch, one of the most valuable of all our Scotch woods, has been visited, noticed first in this quarter some six years ago, threatening to fairly exterminate belts of from seven to fourteen years standing? Also, if it be yet known what was the result of the investigations of the talented author of the Book of the Garden, M[illegible] McIntosh, to illucidate this mystery? [illegible]

VARIEGATION OF PLANTS.

I HAVE read the articles in your Journal on the variegation of plants, and shall not assert that Mr. Beaton has endangered his valuable head amongst his sporting Geraniums, but merely state a few facts from my own observations.

About thirty years ago I planted a group of variegated Hollies in a deep, rather rich soil: they were silver-edged, gold-edged, gold-blotched, and silver-blotched. In the course of ten or twelve years the gold and silver-blotched trees became quite green in their foliage, except a few stunted branches low down at the ground. The trees became more luxuriant than those which retained their variegation—so much so that the person now in charge of them cut two of them down because they were overgrowing the others, and because they were but common green Hollies.

Some ten years ago we sowed some beds of Hollies. About 20 square feet of one of the beds were sown with seeds from *variegated* Hollies; they came up very well, but their cotyledons were all white or a light straw colour, not a green plant amongst them; and in the course of eight or ten days they were all dead, every one of them, and the common green plants, side by side with them, continued to thrive. Perhaps some of your readers have tried the same sowing.

We often observe green branches grow from the old small-leaved variegated Ivy; they are stronger twigs, with larger and better-formed leaves than their neighbours of the variegated kinds. Those are often small and deformed, so are some of the variegated Geraniums. Also, we see twigs produced from variegated Hollies become yellowish-white, not a speck of green to be seen, both twigs and leaves stunted.

Then there is the Vinca major with its beautifully gold-pencilled leaves; stimulate the plant, and it will send up twigs with large green leaves without any variegation, and, perhaps, it may be a year before the said leaves become variegated.

If variegation be not a disease it certainly must be admitted that its subjects are dwarfish and stunted.—ILEX, *Aberdeenshire.*

GENERALLY USEFUL CULTIVATORS.

As I stated in my last, the reason that gentlemen do not keep in their own hands the land attached to their residences, is, that they cannot find servants to manage it with the garden. When they tried, it was so managed that there was neither pleasure nor profit derived from it; and I have seen so many convincing proofs of this during the past eight years, that to me it is matter of surprise that gentlemen living in rural districts, and taking much interest in the district schools, do not take the most promising boys when they leave school into their service, placing them under the care of some one that will make them, instead of a third or fourth-rate gardener, a good, generally-useful cultivator; for after being in a garden for four or five years, and learning a little by the rule of thumb, young men in size and years, yet only boys in wages, look down upon the generally useful man, and think that to undertake such a situation would be lowering their dignity, and must necessarily bring them a grade or two under the general dignity of "gardener." But, before a man can be a generally useful one, in the fullest acceptation of the term, he must cast aside that false pride, and not attach importance to a name. "Why should I trouble whether I was called the gardener, or the man that does the garden? Names are like naughts in arithmetic—are of no value alone." And let the young gardener get his mind well stored with that knowledge which will be serviceable to the country, and beneficial to himself, and never mind what he is called. Let his employer's satisfaction, and the Saturday night or quarter day, be the test.

I will give one illustration in proof of my position—viz., that there are hundreds, if not thousands, of gentlemen in every county in England, that would give good wages to a competent man that would undertake the management of the garden, land, cows, and any other stock that could be profitably kept. That land can be made profitable to gentlemen as well as to farmers I will try to prove in subsequent papers.

A gentleman that used to visit my late master, one that knew the advantages derived from keeping a cow or two, and making hay for carriage horses, had seventeen acres of excellent meadow land adjoining his residence, his own property, and nearly all could be seen from his drawing-room windows. The lawn, which had a nice, gentle slope from the house, was taken out of a meadow of about eight acres, and separated from it only by iron rails There were several ornamental clumps of trees with a belt of Firs and other ornamental trees, from north-east to south-east. The land was let to a near farmer, who mowed it every year, and sold the hay. During the winter young stock was kept on the ground, and served with the roughest and worst hay he had, in dabs about the ground, and from the early part of winter to the latter part of April or May, it more resembled a farm barton than a grass field. Such was the winter view from the drawing-room. Now, this gentleman seeing that his land was being impoverished and made unsightly, and his domestic comforts curtailed, at last spoke to his gardener on the subject of keeping it in his own hands, with a view to profit and improvement, and his taking the management of it with additional help, and an advance of wages. Nothing could appear more reasonable or more advantageous to both master and man.

Now, this man was a common-sense man on things generally, and work was no object to him; but in this matter he exposed his weak points, and his reply was, "That he came there as a gardener, and as a gardener he should remain;" and as he suited the gentleman and lady on other points, the gentleman gave up the idea, and the land is still let to the farmer.

Some time after, when the gardener related the circumstance to me, and I rated him pretty sharply for his folly. His excuse was, that by complying with his master's wish he should destroy his character as a gardener. Since then he has taken another situation, where he milks the cow or cows, and serves the pigs, and is a thoroughly generally useful, doubly valuable to his employer, because he realises the advantages of a country residence. The man is no less a gardener, as he told me some time ago he has been a more successful competitor at the local floral and horticultural shows than in former days when his whole time was devoted to gardening. In his own words, he felt he is "a better man, would fetch a higher price in the market, and always saleable."

Now, all those young gardeners that are a drug in the market, or wasting their time in a nursery, could each one stand in the same position as the man I have just mentioned. First get the will or desire, then add determination to it, and in a very short time they will find they are men sought after. Doubtless, some of the readers of THE JOURNAL OF HORTICULTURE desirous of improving their circumstances, may very justly say, "How can I do it? I am willing to learn and obey, but who will teach me? In gardening, with perseverance mentally and physically, I can soon make myself acquainted with all the details of the art. There are full instructions of work to be done in the week coming; also, full instructions of what was or should have been done in the week past. Still if the neglected portions are carried out the week following, it will be no disgrace to be only a week behind such men as Mr. Fish. Then, again, if we want to make a dazzling show (and who is there that does not?) and to make it last as long as possible, we have only to consult Mr. Beaton's weekly papers to inspire us with a spirit that will work wonders. But, about cows, pigs, and sheep, is there really anything to learn, or anything worth learning?" Most certainly there is, and everything connected with that department wants to be as well understood and as properly attended to as the various plants in the greenhouse. And for the benefit of those who may be desirous of learning something on that head, perhaps a few remarks bearing upon the subject, as a kind of compromise between the work to be done, and the work done, may not be unacceptable to the general readers, providing it is brief. But having exceeded all bounds in this disjointed ramble, I will leave the matter-of-fact till next paper.—THE DOCTOR'S BOY.

CONSTRUCTING A PIT OF TURVES.

IN compliance with what is stated at page 459 of your last Volume I send the following statement:—

Yarrow and Haresfoot Grass having gained nearly the sole possession of many parts of my lawn, I decided to lay down fresh turf. As before stated, the surface of my garden is uneven, and that part the most so, of the least use, being 5 feet or 6 feet below the surrounding ground (except the open end), and of an oblong horseshoe shape, sloped on the sides and one end from top to bottom. I decided to make a pit there, and use the old turf for the walls, as an experiment: therefore I made a pit 6 feet by 12 feet, 7 feet deep on the front and 9 feet at the back, and covered with one light of Hartley's rough glass. This pit was made in the autumn of 1859.

The following year, being obliged to take up more turf, I made an addition at right angles with the other, such addition being 27 feet long, and as wide and deep as the other part, and covered in the like manner by a light 21 feet long, which touches the other; the square in the corner being covered in a somewhat dome-shape with the like sort of glass.

The pit is 2 feet 6 inches deep in the ground on the front and 7 feet at the back. To the level of the ground is a brick wall, and above the ground all is made of turf. The turf wall is covered with zinc all round, and on the fronts spouts are formed of the zinc, from which a pipe at each end runs through the turf wall into zinc tubs inside to hold water for the plants, and a provision is made for the escape of waste water into the garden drain.

The situation of my garden is rocky, and on the slope of rather hilly ground, running westwards from the back, consequently in the summer parts are rather too dry, and in a wet season there is a great drainage from the higher ground to my garden. To provide for these difficulties I made a border inside the pit, puddled it with clay on the bottom, and 2 feet deep at the back. On the front I put quarries, set in the clay, sunk 10 inches below the surface of the floor, and then cemented the whole border. The quarries I had made 7 inches wide, 14 inches deep, and 1¾ inch thick. So far all seem to answer. The part first built drains to the south and the other east inside and outside.

The lights are fastened together, and kept in their places by upright pieces of wood (to which they are screwed) let in, and resting against the turf, and into these props are fixed, with their feet against the walls at the ends, and one near the corner.

There are two openings, each 9 inches by 14 inches, and 6 inches above the ground; two pivot panes in the dome-shaped light; twenty-nine drain-pipes 4 inches wide and 12 inches long, some placed singly, some three together, and others five together, chiefly on the back, and just above the ground; and in other parts there are eighteen one-inch drain-pipes, all in the turf, with zinc caps to all for the winter, and perforated ones for the summer; also an opening at the bottom of each door for ventilation.

Last winter there were planted in the borders a Lapageria rosea, three Camellias, Lilium giganteum, some Clematises, Geraniums, Chorozema ilicifolia, Adam and Isabella Grey Roses, seventeen of the Bhotan and Sikkim Rhododendrons, &c., besides some Tropæolums and Alströmerias, &c., which were plunged. In pots, not in the borders, were two Deutzia gracilis and thirteen Japan and other Lilies.

All the pipes were open up to Christmas-day morning, when I went into the pit about eight A.M., and found the leaves of the plants hanging down, and the soil in the border rather hard. That morning I stopped the openings, and covered the lights with single mats, which remained on about a month. The plants gradually recovered, and I found nothing injured but some of the Geraniums, and I lost the Chorozema—nothing more. The Camellias flowered afterwards. The thermometer never indicated more than five degrees of frost in the pit.

The plants do very well, except so far as some of them have been injured by having their leaves eaten. What does the damage I cannot make out. I have found spiders and very small flies on the border. I attribute the injury to my neglect in not smoking the pit in spring, as after it was once done the damage was less, and when repeated little more injury was to be observed.—I. G.

HERBACEOUS BORDER IN THE GARDEN

BY THE WARDEN OF WINCHESTER COLLEGE.

[illegible] wished to have a list of the plants upon t[illegible] and in [illegible] little mixed border which runs alongside o[illegible] You have already had all the p[illegible] [illegible] are given in the nint[illegible] [illegible] ur excellent Journal. I [illegible] some c[illegible] [illegible] ace in this border since t[illegible] anythi[illegible] it here, reference [illegible] mad[illegible] will be[illegible] the follow[illegible] [illegible] ther [illegible] [illegible]

Jasminum officinale.—Much cut up, but has recovered. J. nudiflorum.—Blossom all killed, tree not hurt. J. revolutum.—Killed entirely.

Lycium europæum.—Not hurt.

Garrya elliptica.—Not injured. A fine plant.

Edwardsia grandiflora.—A very large, fine, old plant. Killed nearly to the ground, but is putting up shoots again very strongly.

Cydonia japonica.—A fine plant. Some of its branches were killed. C. japonica alba.—The same.

Spiræa Lindleyana.—A fine plant. Flowered very finely this year, not hurt.

Forsythia viridissima.—A fine plant. Its blossom killed; not much hurt.

Olea europæa.—A fine plant. Killed entirely.

Caprifolium gratum.—Not hurt. C. flexuosum.—A fine old plant. Killed entirely.

Robinia hispida.—Not hurt.

Passiflora cœrulea.—Killed.

Clematis azurea grandiflora.—Not much hurt. C. montana.—Not much hurt. C. bicolor.—Killed.

Pittospermum tobira.—Killed.

Daphne Dauphini.—A fine old plant. Killed.

Aloysia citriodora.—A very old plant, which is cut or dies down to the ground every year, shot up as vigorous as ever.

Ceanothus azureus.—Dead.

Siphocampylos bicolor.—A very old plant, put up as well as ever.

Punica granatum.—Does not appear to be injured at all.

Chimonanthus fragrans.—All its blossoms and many branches killed.

Deutzia scabra.—Not hurt.

Weigela rosea.—Not much hurt.

Arundinaria falcata.—Very much injured, but is progressing fairly.

Escallonia rubra.—Killed. E. macrantha.—Killed.

Buddlea Lindleyana.—Very much injured.

Colletia horrida.—Not hurt.

Veronica Lindleyana.—Killed. V. speciosa.—Killed.

Pæonia Moutan.—A fine old plant. Much injured.

Habrothamnus fascicularis.—Killed to the ground. Has put up again very strongly.

Phormium tenax.—Very much injured, but is putting up very strongly again.

Wistaria sinensis.—A remarkably fine plant. Nearly the whole of its blossoms, and its spurs too, were killed; but it appears to be quite recovered again, and produced abundance of bloom in the summer.

Three fine old Myrtles had their branches very much injured, but they have put out again very strongly indeed this season.

About Roses we have not anything in particular to notice. Ruga, not at all injured. Bracteata, a very old plant, killed. La Marque, not much hurt. Jaune Desprez, killed. White Moss, not injured. Maria Leonora, killed. Banksia, very much injured. Devoniensis, killed to the ground, but has put up again and flowered well.

The Fuchsias Ricartonii, virgata, multiflora, gracilis, Youngii, grandiflora, and globosa have all been here for the last twenty-seven or twenty-eight years, and are all cut down to the ground every year with the exception of Ricartonii. Sometimes some of the shoots of this pass over the winter uninjured; not that it is needful, for they put up so very strongly every year from the ground as to reach the top of the wall.

The following is a list of the plants we had occasion to plant to cover the wall, owing to the loss occasioned by the winter:—

Maurandya Barclayana, Lophospermum scandens, Cobœa scandens, Tropæolum Lobbianum, T. canariense, with several large and tall old Pelargoniums, which flowered well and reached half way up the wall, finishing with about a dozen sorts of Chrysanthemums. I have just planted also two very strong plants of the Virginian Poke, Phytolacca decandra, at the foot of the wall to flower and fruit early, its fruit being so very ornamental and showy.

A list of the hardy herbaceous plants that form the back row:—

Spiræa ulmaria variegata, lobata, and japonica; Ranunculus repens pleno, and aconitifolia pleno (this delights to be in a shady place); Polemonium cœruleum grandiflorum; Potentilla McNabiana, and Garneriana; Rudbeckia purpurea, and hirta; Geranium sylvaticum, ibiricum, rheum, and striatum; Veronica [illegible] lida laciniata and elegans; Phlox speciosissima rubrum, Riversi, Radetzki, and Rendatler; Anemone japonica; Aster multiflora; Melittis grandiflora; Melissa grandiflora; Doronicum austriacum; Erigeron philadelphicum; Dielytra spectabilis (two plants); Achillea rosea, ptarmica pleno, and eupatorium; Monarda didyma; Nepeta violacea; Campanula glomerata autumnalis, azurea, and speciosa; Solidago viminea; Dianthus Garnerianus; Chrysocoma linosyris; Dracocephalum virginiacum.

List of plants forming the front row:—

Scilla peruviana, and præcox; Smilacina bifolia; Pulmonaria virginica, officinalis, and angustifolia; Polemonium reptans; Aster ramosus; Geranium sanguineum, and lancastriense; Geum chilense; Iris pumila; Pancratium illyricum; Narcissus bulbocodium; Erythronium dens-canis; Eranthis hyemalis; Omphalodes verna; Betonica grandiflora; Prunella pennsylvanica; Silene Schafta; Viola montana, and calcarata; Arabis grandiflora or caucasica, and caucasica *var.* variegata; Aubrietia purpurea; Orobus vernus; Anemone sylvatica; Campanula carpatica, carpatica alba, and pumila; Potentilla Tongueii; Sedum oppositifolium; Trollius europæus; Lithospermum purpureo-cœruleum; Corydalis bulbosa; Phlox Nelsoni, subulata, and procumbens; Pentstemon procerus; Radiola rosea; Achillea tomentosa; Alyssum saxatile; Narcissus minor; Primula Auricula *var.* hortense, and vulgaris *var.* double lilac and double white finish the list of the front row at the present time.

We used to have the Crocus and Snowdrop, a few bunches of each, in the last-mentioned row of permanent plants; but now we have taken about 3 inches off the grass verge to make room for a row of bunches of the Crocus, doing away with the Snowdrop altogether from this border, and introducing the Crocus in three colours—white, blue, and yellow, the whole length, which we think will look better and not interfere with anything else. These most likely may remain for some years without being disturbed. Every bunch in the border stands 3 feet apart from centre to centre of each bunch, and the bunches stand exactly alternately with each other—that is, the back is in line 1½ foot from the foot of the wall, and the second row stands in front of the line at 2½ feet from the wall. The back row requires sixty-six plants to complete it at 3 feet apart, and the front row requires sixty-eight plants to fill it, and sixty-six bunches of Crocuses to finish with.

The Crocuses are not labelled, as every one knows it is a Crocus when it is in bloom, and I know whereabout they are in the border when they have died down, so as not to disturb them at any time or when in the act of planting any other plant; but every one of the other two rows of plants is labelled, and a very nice finish it gives to the appearance of the border during the winter and spring months.

As soon as the leaves are all off all dead flower-stems will be cut and tied up in bundles for other uses, and the border made clean and tidy; and then a few wheelbarrowfuls of leaf mould, old rotten manure, or both, will be broken up and to be put up round the collars and over the crowns of the Fuchsias, Myrtles, &c.—in fact, nearly every plant upon the wall will come in for a share of this top-dressing; after which, when severe weather sets in, the tied-up flower-stems, matting, &c., will be used for protection of the Myrtle, &c.

I forgot the Tigridia-bed which is in the centre of this border. This is always well protected in severe weather.

In this way the border remains until fine and favourable weather in the following March, when the border is carefully dressed off, and any plants that may appear to be too spreading are taken away as the work goes on, and the identical spot to receive it again is thoroughly worked up with a spadeful of leaf mould, old rotten manure, or both mixed together, is added, as I always have my wheelbarrow at my heel with this kind of material in it when I am dressing off the flower-beds or borders.

There are a great number of these hardy herbaceous plants that are all the better for being taken up every year—indeed they cannot be kept in good order without being so cared for; whilst many others of compact and close habits will grow on and do well for several years without being disturbed. Such plants in general do not like to have their roots touched, but would rather have a spadeful of top-dressing round their crowns—in fact, many a choice plant is entirely lost through the borders being handled by careless and inexperienced persons.

In planting out an ornamental mixed border the same kind of plant may be used to much advantage, which is the case in our little favourite border. There two Dielytras, two Phlox speciosissimum rubrums, two Nepeta violaceas, four bunches of the Anemone japonica, and so on in several instances. This depends upon how much we may like this or that plant. We do just the same in planting a circle or any other shaped bed. We place our plants to correspond and match with each other, varying the colour and kind as much as possible, and always placing the plants in alternate rows.

In our little favourite border at bedding-out time we make a point of using our largest plants of whatever kinds we may think well to use, so as to have the bed as full as we can from the first and to have early bloom. For instance, we use up the old plants of Tom Thumbs and other kinds that were lifted out of the borders the year before. For three or five years we only used two kinds of plants in this border, which were Tom Thumbs in the front row and Cœlestina ageratoides in the back row; only where the Crocuses, Snowdrops, and one or two others stood in the front row, some other kind of summer plant was let in carefully by their side with a trowel.

Last year we used in the front row Tom Thumb and Variegated Alyssum the whole length, and in the back row we plant every sixth station with Brompton Stock. These were turned out of pots when the border was dressed off in March; then at bedding-out time finished with Cœlestina ageratoides, compactum, Cerise Unique and Flower of the Day Pelargoniums, using all good large plants; and I believe few mixed borders could look better than this has this summer.

There are a few sorts of annuals sow themselves about in this border—such as Silene pendula, S. armeria, Adonis autumnalis, Hibiscus africanus, Nigella damascena, Chryseis californica, and the Myosotis alpestris. This once occupied two spots in the front row of permanent plants. Though discarded from these two spots, it still is allowed some small space or other, or near to Narcissus bulbocodium, or the Erythronium dens-canis, or Pancratium illyricum, or Scilla præcox. Either this Myosotis, or some of the before-mentioned annuals, are allowed a little space to flower near to any of the permanent plants that may flower and go off early—the Pulmonaria virginica, the Iris pumila, the Omphalodes verna, and some others; but these self-sown plants are not allowed to stifle up and destroy the permanent plant. Sometimes these little plants have to be lifted with a trowel to the right places where they are to flower; but if they should come up in the right place so much the better.

One of this border's greatest weeds is a very rare Grass—Digitaria sanguinale. This I sowed some twenty-five or twenty-six years ago. Like most things it likes good ground to live upon, and if allowed would be very troublesome.—T. WEAVER, *Gardener to the Warden of Winchester College.*

MAIZE AND TOBACCO.

THE Indian Corn looked over the fence,
And what do you think he spied?
A field of Tobacco, just ready to bloom,
And stretching in lordly pride.

To his broad-leaved neighbour at once he called,
In accents loud and clear,
"I thought you belonged to a summer clime;
Pray, what are you doing here?"

So then, with a haughty air, replied
That plant of power and pelf,
"You are pleased to ask of my business, sir—
What do you do, yourself?"

"I feed the muscle, and blood, and bone,
That make our farmers strong,
And furnish bread for the little ones
That round their tables throng."

"I move in a somewhat loftier sphere,"
The foreign guest rejoined,
"As the chosen friend and companion dear
Of men of wealth and mind.

"I'm the chief delight of the gay young spark;
O'er the wise my sway I hold;
I lurk in the book-worm student's cell—
In the dowager's box of gold.

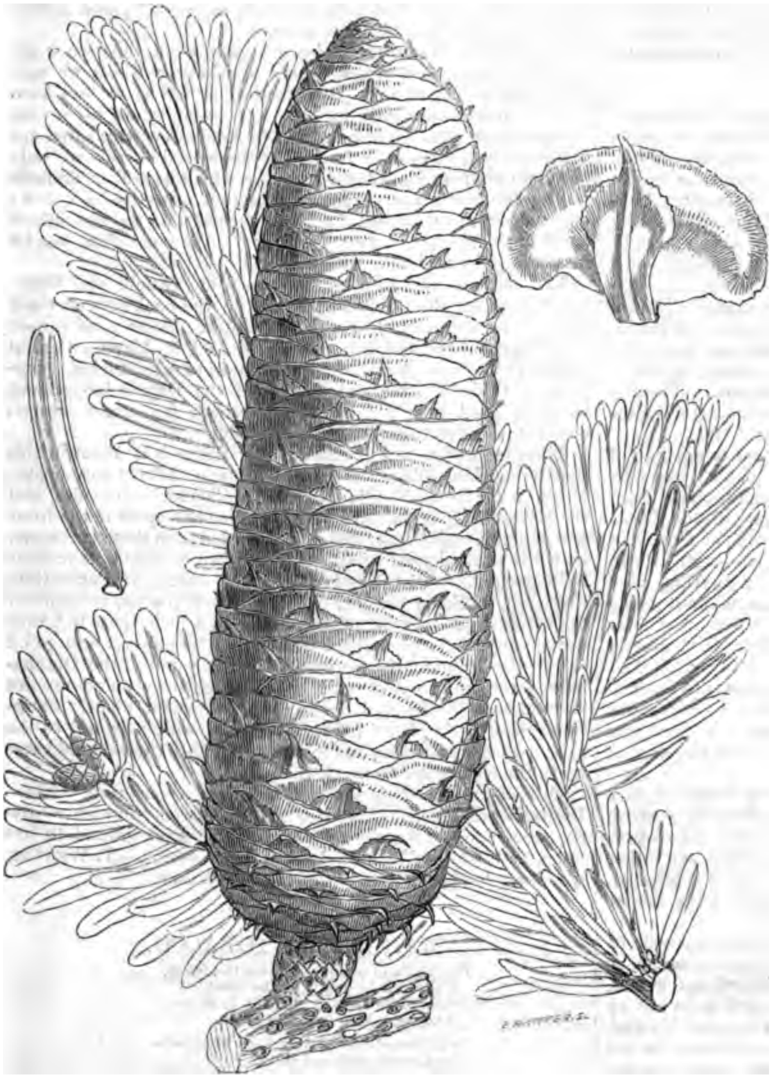
"Thousands of hands at my bidding work;
Millions of coin I raise"—
He ceased to speak, and in angry mood
Responded the tasselled Maize:

"You're in secret league with dyspeptic ills—
A merciless traitor band;
With clouds of smoke you pollute the air,
With floods of slime the land.

"You tax the needy labourer sore;
You quicken the drunkard's thirst;
You exhaust the soil—and I wish you'd go
To the place whence you came at first."

THE NEW CONIFERS OF JAPAN.

PICEA FIRMA. *Siebold*—THE JAPAN SILVER FIR.



THIS is one of the new Conifers discovered by Mr. John G. Veitch in Japan, and introduced by him in the early part of the present year. Our figure was drawn by Mr. Fitch, the eminent botanical artist, from specimens of the branches and cones sent home by Mr. Veitch, and which were placed at our disposal by Mr. Veitch, of Chelsea.

The tree attains a great height, and in habit of growth resembles the common Silver Fir. Its branches are produced in regular whorls, and extend in a flat horizontal direction. The leaves are in two rows, very thickly set on the shoots, an inch long, flat, and blunt-pointed. The cones are cylindrical, from 3 inches to 4 inches long, and rather over an inch broad. Scales broad, wedge-shaped at the base, rounded on the margin, and slightly crenulated, deciduous. Seeds triangular, and soft, with a broad wing.

Mr. Gordon, in his excellent work *The Pinetum*, says:—"According to Dr. Siebold, it is found on the Japan Islands of Nippon and Jezo, and is frequent in the provinces of Mutsu and Dewa, at an elevation of 2000 or 3000 feet. The Japanese distinguish different varieties under the names of 'To-Momi,' from the north of China, and the 'Jezo-Momi,' or the Nire-Momi' of Japan; this last is distinguished by its leaves sloping more towards the ends of the branches, and by the cones being much shorter. They also distinguish a kind with the ends of the leaves slightly divided (bifid); but such variations appear to be produced by elevation, climate, and soil, and are, as well as Dr. Siebold's Abies homolepis, nothing but the species altered by such circumstances."

There is no doubt but that this tree will prove perfectly hardy, as all the other Conifers are that have recently been introduced; and, although it may not possess so distinct a character, nor exhibit so much novelty in its outline as some of the new introductions, yet it will be a useful acquisition to our collections.

CHEAP FUMIGATOR.

I SEND you a description of an efficient fumigator that I have had made, which, from its cheapness, I think deserves to be called a "fumigator for the million."

Procure from a grocer an empty tin canister which may have contained mustard, snuff, chicory, or some such produ[illegible]ion. The cost will be from 1*d*. to 3*d*., according to the [illegible] quality, holding from a pint to a quart; get a hole [illegible] the top and bottom of from three-eighths of an in[illegible] [illegible]ters of an inch in diameter, and a tin tube ab[illegible] length soldered in each end. The one in the lid s[illegible] little in diameter from the lid, so as to admi[illegible] [illegible]mon k[illegible] [illegible], being attached to it [illegible] a litt[illegible] [illegible] the escape of smoke [illegible] then ha[illegible] [illegible] perforated zinc ab[illegible] [illegible] must, [illegible] of tin [illegible] the inner cylinder of perforated zinc slipping to the bottom of the tin case would stop up the hole by which the smoke is to find an exit.

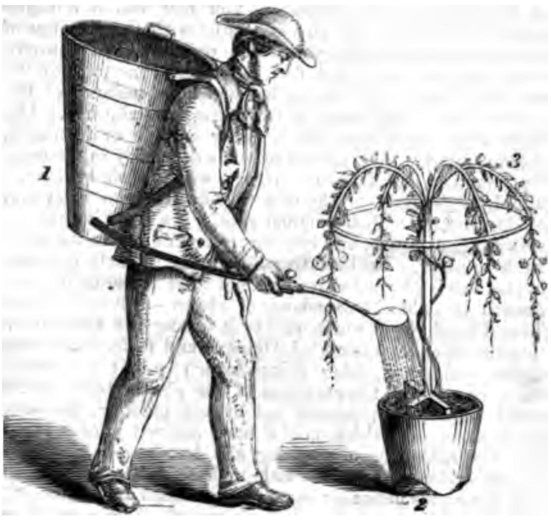
To use it fasten the lid by its tin tube securely to a pair of bellows, tying round the insertion of the bellows into the tube a [illegible]tle damp rag, or some such thing, to prevent the escape of smoke. Put into the perforated zinc cylinder the quantity of tobacco likely to be required, light it and give two or three [illegible]s with the bellows before placing it in the tin case. Having [illegible]ted the cylinder containing the lighted tobacco in the case, [illegible]ne lid on with the bellows attached and throw over the [illegible] damp cloth to prevent any escape of smoke at the lid. The tube at the end of the case may then be inserted in any [illegible]ame or house requiring to be fumigated, and an effect produced [illegible]fficient to settle any quantity of insects.

[illegible] have, myself, two such fumigators, one made of a tin case, [illegible]ding about a pint: the other holding a quart. The smaller [illegible]inder will hold about an ounce of tobacco, and the larger [illegible] any quantity up to [illegible]-pound. In using the larger [illegible] s it helps to keep the tobacco in its place in course of bustion.

he whole apparatus costs from 6*d*. to 1*s*., according to the used; and, with the exception of the soldering of the tubes, one with a little ingenuity may make it for themselves, pur-sing the perforated zinc, which costs about 6*d*. per square, and using fine copper wire to fasten the side and ends of the nder.—COUNTRY CURATE.

GARDEN UTENSILS.

.T the Agricultural Institute of Hohenheim, a new method of ering plants and gardens was brought into notice, and which, German, is called, *Schnellgiesser;* in Flemish, *Schnelgieter;* in French, *Arrosoir a la minute* (all three terms signifying, 'ally, *quick waterer*). *Fig.* 1 shows this invention with the le of applying it. It consists of a wooden tub, bound by ps of iron, furnished at the top with iron handles, and in it with two stout leather straps, by which it is suspended n the back of the workman. At the bottom of the tub is a per socket, to which a gutta percha or Indiarubber pipe is ched, and at that part of this pipe, which may be conveni-y held by the hand, there is a small turn-cock, and beyond a spout and rose, the latter having the holes below. The contains as much water as the workman can carry, and when empty it is not taken off his back, but filled at the pump by cond person. The turn-cock enables the operator to stop or harge the water at pleasure. By this contrivance a great ng of time and labour is effected.



ig. 2 represents a new pot constructed to prevent worm-ering at the hole in the bottom. In some gardens, where the h is rich, the earth-worms are very troublesome, especially n the ground is damp. In these localities the worms crawl the pots by means of the hole at the bottom, and if they mit little injury in the open ground, they are not so harmless ng the roots confined in a pot. In order to obviate the evil ing from their intrusion, the new form of pot represented at 2, has been invented by M. Ghyselin, potter, at Brussels. bottom is distinguished by having three feet, which are only longations of the pot. The bottom is thus raised above the ind, and the worms are thereby prevented from entering at hole. This pot has also the advantage of facilitating the ulation of air, and preventing the stagnation of water.

mong the useful horticultural contrivances, may be noticed iron trellis, represented at *fig*. 3, which combines solidity, ance, and lightness—qualities never found together in wooden ises. The iron trellis, too, preserves all the forms or shapes h are given to it, and one may thus train plants in all the ed styles which are otherwise applicable. The form which is l has a circular head, like a parasol, consisting of four wires, h are bent and sustained in their position by three circles or s, the undermost considerably stouter than the others. The stem is supported at the base by three prongs, which are made so as to admit of being fixed in the ground or in a pot. This form, when made from 3 feet to 4 feet high, produces a very good effect, when used to support such a plant as Calystegia pubescens, which looks remarkably well trained to this form of trellis. This same form may also be used in training climbing Roses, in pots or in the open ground; their branches being led over the arches so as to cover the whole, present a mass of flowers in the summer time.

HYBRIDISING MANGLES' SILVER-BEDDING GERANIUM.

INSTANCES OF VARIEGATION—SUPERFŒTATION.

THANKS to Mr. Anderson for the remarks on the peculiar state of the atmosphere. Such was the actual state of it when I succeeded in fertilising two flowers, one each on two distinct plants of the above; and although I tried many at the same time, only two were effectual, and those two, thanks to Mr. Beaton for the knowledge of the effects of the short stamens, were fertilised purposely with the two short stamens of a Golden Chain Geranium, and they perfected four seed-vessels each.

I sowed one lot, and they vegetated; but though they developed the seed-leaves, they could go no further. They were pure white and yellow without a particle of green. They stood from ten to fourteen days, and then one after another bowed their heads, and in a few hours became decayed vegetable matter, verifying Mr. Beaton's experience.

I undertook the experiment because it was stated in THE JOURNAL OF HORTICULTURE, in notices to correspondents, that it would not cross with any Geranium in cultivation. I tried many times after up to the end of the season, but without success: therefore I fully endorse Mr. Anderson's views, that cross-breeding is an open field, and it is very difficult to define where we may or may not go.

I shall not contend with "NICKERBOR," or any one else, whether variegation be disease or not; my own experience would give the vote to Mr. Beaton's theory that it is all in the pollen. In fact, I feel almost justified in saying I could reduce it to a positive law, but it would require experience under different conditions of soil and circumstances to fully bear me out.

I can beget variegation at will, either white or yellow, under my present circumstances, to an indefinite extent. The grand point is not to overdo it, or no man on earth can grow them.

While I am upon the subject, I may observe that Mr. Beaton asked the question, a few weeks back, whether variegation increased in intensity in proportion to the time it lay dormant, when the proper conditions for its development brought it forth. Now, as he was the raiser of Hendersoni, can he say whether it showed any signs to variegate in the seed-leaf? If so, he has the opportunity to establish his doctrine, for it has variegated with me, and is one of the purest of the white ones, and I believe, with its white leaves and white flowers, will be a very desirable edging plant, as its rampant growth is very much curtailed.

Query. Who dare attempt to say how many times it had been repropagated before it showed the variegation?

I have also Muscar Martin variegated. Who is his progenitor? I have also a Bramble beautifully variegated, produced exactly as Mr. Beaton described it might be. It was not done intentionally, but it came up where it was not wanted, so its head was pulled off. It came again and was beheaded again, and this was repeated several times. At last the variegated one came, and so it had permission to live. This was done before Mr. Beaton wrote about it, but I thought it worth a passing notice.

Surprise was also expressed in THE JOURNAL OF HORTICULTURE, a time back, at a Carnation two years old and 3 inches high, but I have one two years old, perfectly healthy and branching, only 1 inch high.

I also produced a cross between the Alpine and the British Queen Strawberries. It never attained above 4 inches high, flowering most profusely, but was perfectly barren, and after growing it in various ways three seasons, I kicked it out. May there not be something analogous in these two cases to the short stamens of the Geraniums?

I have a plant of Pteris edulis that threw up one frond variegated, but it was barren. I have also a seedling plant of the common Bracken (Pteris aquilina) that grows pure white fronds, the quintessence of loveliness, but they are very fragile in the sun. I have no shade to try it in. I thought if it produced spores next year, perhaps some of the seedlings might come the ordinary variegation.

I find it bad practice to sow any choice crossed seed in the autumn. I had from two to three score of very singularly marked Geraniums, many of them tricoloured, yellow, green, and red, in which the green formed so small a part, that after they had made six, seven, and eight leaves in the warm weather they have not been able to hold up against the dark days of November.

I have not convenience to carry out experiments as I should like, yet I do not despair of being able to produce for the gratification of Mr. Robson, some day, Mr. Mangles in a gold-laced coat.

I fancy I have a case of superfœtation. Perhaps Mr. Beaton would think otherwise, but it was as follows. I had a nicely marked Geranium seedling with good flower and truss, but rampant in habit. I grew it in the conservatory last year, and I fertilised one flower with the pollen of British Flag and Punch, just for experiment. It ripened four seed-vessels—one missing, notwithstanding the abundance of pollen. I sowed each seed-vessel without dividing it. The seedlings came up, and in due time I divided them round a six-inch pot to winter; in the spring they were divided, and planted in the shrubbery with a particular mark. No two of them were alike either in flowers or leaves. One was a model of Punch, another was a model of British Flag, but with larger flowers. I marked it Grandiflora. Two were a mixed muddle betwixt the three, and the fourth having broken a most beautiful golden variegated shoot with a shade more of the Buttercup in it than Golden Chain, his head was immediately cut off before he opened a flower. This appears to my mind an evidence that superfœtation is quite possible.

I have a very nice seedling, very dwarf, and very free flowering, having plain foliage, with a shade more crimson in it than Christine, and in size smaller in the flower, and a third smaller in its growth.—Wm. Smith, *Gardener*, *York*.

IS VARIEGATION A DISEASE?

By all means let us have things called by their proper names. We are, everybody knows, already running riot with our interpretation of the words of the English language in its etymological sense. Indeed, there is little wonder that foreigners are so perplexed at, and declaim so vigorously against, its peculiar construction and diverse application. Let a few more papers be written to the effect that variegation in vegetable physiology is the consequence of disease—*re vera* as some would have it disease proper, and possibly the very next edition of Walker's Dictionary may have them set down as synonymous terms. Fortunately there is a growing desire in the best conducted literature of the day to discountenance aberrant allegorical construction. There are instances on record of seemingly far less moment than the one in question where the creation of a novel term has called forth a considerable amount of criticism, and latterly either been accepted or ignored; among which we might mention Lord John Russell's celebrated phrase in criticising the wording of a certain bill—"Conspicuous for its absence;" and also the adoption of the word telegram in lieu of telegraphic dispatch. The latter of these instances, as will still be fresh in the recollection of many of your readers, created a very animated controversy between the chief members of the rival Universities, not to speak of other luminaries of learning. All the Greek dictionaries were dissected in order to establish pro and con their respective creeds of derivation, and now it is one of the commonplaces of conversation in everyday life, doubtless all the more readily adopted for its brevity.

That, of course, was simply a question of derivation; but this involves a far more intricate question, more especially if we concede that variegation is the consequence of disease either in root, stem, or organs of reproduction, and something not quite so intricate if we dispute that is disease proper. These, apparently, are the two cardinal points at issue, and all practical men must know either less or more concerning them.

We have no invincible demonstration to convince us that variegation in its [illegible] forms is the consequence of disease in the physiological system [illegible] plants from which it springs, whether that variegati[illegible] breeding, or rather it sprung [illegible] It is [illegible] animal [illegible] disease [illegible]

all sides, that variegated plants will produce numerous seedlings as healthy and as heavily charged with chlorophyll as their grandfathers and grandmothers and great-grandfathers and great-grandmothers, if ever they had such venerable kinsfolks. But Mr. Darwin says that "analogy is a deceitful guide." Is it not so in this instance? Ask all the best gardeners in the country who do not adhere with stoic pertinacity to "set rules"—of course, we may be open to such a charge—and ninety-nine out of every hundred will tell you that the variegated plants committed to their care, and under their most diligent scrutiny are just as healthy and nearly as patient of fatigue as other cognate species with more perfect (?) digestive and respiratory organs. There are as little appearances of premature decay and wearing out amongst them, and their numbers are fast increasing, than among their more gigantic congeners. Do Mr. A. Henry and those who think with him place Golden Chain and Dandy Geraniums on the same footing as Flower of the Day and Countess of Warwick? Surely not. Their malady cannot be of so malignant a nature. We might just as well affirm that Tom Thumb and Frogmore, because they are comparative dwarfs to Glendining Scarlet and Cerise Unique, were also in trouble. They are fully charged with chlorophyll to be sure, but they are diminutive; and we are fully of opinion that all variegated plants can be empanelled for no worse trait of character. Mr. Beaton says truly that "the tiny midge is as healthy as the antelope."

It is very generally admitted by all those who have thought over the question that variegation is invariably accompanied with a diminution of growth; but we have yet to see with our eyes, although "we have heard with our ears strange things—things too wonderful to understand," that diminution in stature is accompanied with disease. You may call it retrogressive variation—if you have any sympathy with the leanings of the floral-loving community you will be obliged to call it progressive variation; but you must first tell us the symptoms of the disease, and point out one single anomalous instance of its fatal effects before your theory is satisfactorily established. Disease, as we understand the term, is either curable or incurable. If these plants are the produce of some deficiency in the organs of reproduction and defective in turn, why is their existence indefinitely prolonged? Why is it they do not pine away and die, or else revert to their original prototypes? It is strange their absorbing, digestive, and respiratory organs are in the very best working order. Brilliant Geranium does its duty quite as well in the hands of the cultivator—and what it wants in rampant growth it yields in abundance of bloom—as its elder congener Tom Thumb, from which variety it sprang as a sport or variation; so does the variegated Alyssum, and so does the variegated Balm, and many other things which might be mentioned. Such are a few of the examples of the plastic power of Nature which have been produced not by manipulation, probably not by accident, and which might have escaped almost [illegible] had the foliage been anything else but variegated. Mr. A. Henry strikes the key-note with undeniable force and accuracy, and shapes his language in a more modified tone thus—"That if it is not disease it is an affection of the plant entailing impaired vigour, and, I hold, diminished growth, whose true cause, whether originating in the seed or occurring in the bunch it is alike desirable to have ascertained; for there is at present a rage for these variegated things, and if the laws which produce or affect them can be clearly shown, then it will be profitable to some and instructive to all to know them."

That is the point I contend for, and so long as morphologically and physiologically speaking, variegated plants enjoy unimpaired health, so long as their organisation is complete, so long as the assimilating process goes on increasing their bulk, I shall always believe, even the most questionable amongst them, to be no less constitutionally and anomalously different from their lustier congeners than the Red Indian from the Esquimaux. Both may not live and thrive under the same treatment, but it is possible to keep them both alive and equally healthy. Doubtless, there are many instances either unobserved or uncared [illegible] where a wonderful "struggle for existence" goes on to the discomfiture and, in time, dissolution of the weaker party. If a row of Limes and variegated Hollies were planted alternately at 6 feet or even 12 feet apart, you would in a very few years see struggle for existence with a vengeance if you allowed the Holl[illegible] remain; but if you transplant them to proper positions in [illegible] localities and use the pruning-knife with discrimination [illegible] magnificent pyramids [illegible] repaying any labour you might bestow upon them. If we wish to be successful with anything, we must use the means.

We do not require two distinct freaks of Nature to be designated by synonymous terms. They are evidently distinct in their general appearance, and sufficiently dissimilar in physiological structure so as not to warrant such familiarities with their habits. Every practical gardener can tell that particular kind of discolouring that indicates disease. You will occasionally see the bleached sickly-looking appearance of some individual branches of Camellias in a Camellia-house. Nobody but a tyro would graft any of these branches with the view of sending it out as a variegated plant; for on administering a proper antidote the leaves revert to their original dark green. You will see instances of such like on the Portugal Laurel, which can be quite as easily accounted for and as easily remedied. But you very seldom, if ever, lose a pure variegation. If we want to see disease we do not require to perambulate our stoves, our greenhouses, and our parterres, where all are rich in beauty, it may be perfect in health, and increasing in bulk every visit during the growing season. We, on this side the Tweed, only want to take a walk through the great fruit orchards in the vale of Clyde, or in the Carse of Gowrie, to see it in its malignant form. There it may be seen in all its stages of development, indicating debility and death from the scraggy-looking lichen-covered stumps of more than half a century, to the vigorous-looking four-year-old, where canker has only insidiously begun.

I was just wondering in what light the supporters of this hypothetical theory would view the sporting disposition of many varieties of flowers. Do those streaked, blotched, and spotted varieties of the Snapdragon (Antirrhinum), which are constantly produced from 1*s.* packets of seeds in endless diversity of strains, or the "roary" colours of these new fancy Pansies exhibited by Downie, Laird, & Laing, come within the category of disease? Then all these fine Hippeastrums (Amaryllids), which I have taken a great interest in for the last half-dozen years, are just so many types of disease. This, of course, will include all the Vittata section, and so many of the Reticulatum and Solandriflorum sections as have been induced by manipulation to depart from their normal state. This is not a "cross-breeding" chapter, or else I might dilate on my difficulties and successes in crossing these three distinct types; but I may state that I have seen sufficient to convince me that variegation, which I call simply variation, is not arbitrary in its tendencies to reproduce. There are some species in Nature, however, which say to the manipulator, "Thither shall thou go and no further," as, for example, the mule in animal physiology.

I may tell you in conclusion, that it is only two years ago when I was particularly struck with a few anomalous examples of Camellia blooms. They were the admiration of everybody who saw them, so beautifully were they blotched, and so perfect in form that the lady portion of the visitors especially almost worshipped them. Some supposed that it was a seedling I had been fortunate enough to raise; others whom I considered good judges asked what London nurseryman had supplied it, and what was its name and price. "Surely," say some, as they rubbed the leaves with finger and thumb, "it is not imbricata." A good judge can pick this variety out among thousands, although not in bloom. It certainly was imbricata, and I have it now in half-dozens completely under my control. I could take either one plant or half-a-dozen plants at one time, and by adopting no very-out-of-the-way method, insure every individual bloom to come blotched. So could I take half-a-dozen at another time and insure nearly every—(for it has a tendency to sport with general treatment)—bloom to come self. All the plants are equally healthy, equally vigorous, showing not the slightest emblems of disease, unless it be the variegation in question, which both ladies and gentlemen prize, and which I am anxious to encourage. I do not believe in keeping secrets of this kind, any more than Mr. Beaton and I shall divulge my practice some other day.—Jas. Anderson, *Meadow Bank, Uddingstone.*

A FEW NOTES FROM MY MEMORANDUM BOOK ON VARIEGATED GERANIUMS.

The summer of 1861 is now brought to a close, and even winter is once more upon us. We have again had the opportunity of seeing the various tribes of bedding plants in the parterre clothed in their meridian splendour. We sometimes talk and sometimes read about the triumphs of the nineteenth century, and triumphs there certainly are; for instance, we saw the great Exhibition of 1851 raised up as if touched by the magic wand, and we have the contemplated Exhibition of 1862 rising up, if possible, with greater rapidity. We have triumphs in steam, and in electricity; we have triumphs by sea, and by land; in fact, there is no branch of industry but what is marked with progress; at the same time the patrons of horticulture have been doing their duty. During the last few years much has been done to improve the various tribes of bedding plants, and I think no class has so much improved as the different sections of bedding Geraniums; it is on these I purpose making a few remarks. The last two or three years we have had some distinct and fine varieties introduced, and I have, this last summer, had the opportunity of seeing some of the newest and best introduced sorts, as well as the choicest older varieties planted out; I have also had the pleasure of seeing the progress they have made, week after week, since they have been planted out, and making a few notes on their merits, as also their shortcomings.

It is not my purpose in these notes to pursue any systematic course, but to jot down the notes as I have taken them at different times.

The class, then, concerning which we shall make a few remarks, is the variegated section, and foremost among these stand the *Cloth of Gold* and *Golden Fleece;* many encomiums have been conferred on these two Geraniums, but not more than they deserve, notwithstanding Mr. Robson's unfavourable remarks about the Golden Fleece a few weeks back.

In the spring, when they were planted out, I was rather inclined to think that Cloth of Gold would take the lead, and I believe that it is the most suitable for pot culture during the shorter days of winter; but under the influence of summer sunlight, when bedded out in the open ground, Golden Fleece certainly proves its rival, not so much in the superiority of its golden foliage, but in its free and vigorous growth, covering the largest space of ground in the shortest time. These two are unequalled for decorative effect, and no gardener, either amateur or professional, should be without them.

Next cometh *Golden Vase,* a striking improvement upon Golden Chain. It is of vigorous growth, yet neat and compact, with broad golden margin, finely contrasted with a bright green disk and dark zone, producing an abundance of large trusses of dark shaded cerise blossoms.

Golden Tom Thumb next follows in the train, with fine broad golden margins, increasing in beauty with the growth of the plant, showing a bright green disk, with a dark zone, and a mass of bright scarlet blossoms.

Golden Harkaway is much after the habit of the old Harkaway, which Mr. Beaton used to write so much about four or five years ago; it has beautiful golden foliage, and would be useful either for vases, for small beds, or for margins round larger beds.

Yellow Belt, we believe, will prove a gem for the flower garden, but we have not yet seen it sufficiently developed in the open air as to be able to judge of its real value for bedding purposes.

Alma is of dwarf, fine, compact habit, with a broad distinct white margin, producing an abundance of bright scarlet flowers, a decided improvement on Flower of the Day, and unparalleled for a front row in ribbon-borders.

Silver Chain is, if possible, superior in some respects to Alma, though its blooms are not so bright, nor, I believe, so plentiful, but the foliage is a brighter green, with a purer silvery margin; it is very effective either employed as an edging plant, or used in groups in geometrical patterns.

Bijou is much stronger and more vigorous than the two preceding, although out for several years; it is one of the most useful variegated Geraniums we have, particularly where large masses are required for ribbon lines and large beds, being of free growth it soon fills its allotted space; it produces an abundance of large trusses of bright scarlet flowers, well thrown up above the foliage; it looks well from the time of being planted till deprived of its beauty by frost, and is but little injured either by hot sun or heavy rain.

Beaton's Variegated Nosegay is of very free and vigorous growth, distinct in habit, with broad green shaded white margins, moderate trusses of red tinted flowers; a good useful bedding variety.

Calford Beauty is of extraordinary free growth, richly variegated, with broad light sulphur margins, and produces an abundance of bright dazzling scarlet flowers; one of the most useful of its class.

Maid of Orleans is much more dwarf in habit, very compact in growth, fine rich variegation, large trusses of scarlet flowers; a desirable variety.

Hendersoni is after the style and habit of Flower of the Day, quite as robust in growth, with a purer white margin, free bloomer, large scarlet truss; a charming variety.

Oriana is quite distinct from all other varieties, of medium growth, sulphur margined foliage, bright pink flowers; a desirable variety for small beds, possessing a novel appearance.

Emperor is possessed of a purer white margin than either Alma or Calford Beauty, with a fine green disk, large noble scarlet truss, useful for all decorative purposes; an appropriate name for such a noble variety.

Annie expands her lovely trusses of bright scarlet flowers very freely over her light sulphur margined foliage; extra good.

I cannot speak so favourably about the *Countess of Warwick* as a bedding variety, for, as Mr. Robson has already remarked, its dark red or brown zone gives it a dingy appearance when viewed at a distance, but for pot culture it is very useful; it has bright scarlet flowers.

Mrs. Lennox and ***Maid of Orleans***, I think, are about identical with each other, possessing pure silver margins, bright green centre, fine scarlet flowers produced freely, of free and vigorous growth; both extra first-class bedding varieties.

St. Clair is new and novel in colour, dark pink blooms produced freely, fine silver margin; first-rate for bedding purposes.

Shottisham Pet has broad white margins, the young leaves disclosing a red zone, which fades with the development of the leaf; brilliant scarlet, or dark cerise flowers; a cheerful variety.

Perfection, dwarf, spreading habit, with a pure white margin, bright scarlet truss; good either for ribbon lines or groups.

Attraction is a very attractive variety, with white margin, fine red zone or inner belt and green disk; pink truss; excellent either for beds or for conservatory embellishment.

Burning Bush is valuable either for flower garden or for conservatory decoration; its peculiar leaf tint, when grown as a pot plant, gives it a charming effect under glass; its fine scarlet flowers are produced freely, with its white-margined foliage, surrounded with a beautiful red zone, and green centre; extra good.

The ***Rainbow*** is a very fitting name for such a peculiar variety, with its various rings or markings of red, white, and green; it has deeper scarlet flowers than Burning Bush, and is a useful bedding variety.

Fontainbleau is a rich, fine, dwarf variety for small beds or margins, with bright pink flowers, inner red or pink zone, clear white margin; a very desirable variety either for bedding or pot culture.

Of ***Mrs. Pollock*** I cannot speak in too eulogistic terms; it is one of the finest variegated Geraniums that has ever been sent out; is entirely new in its rich combination of bright green, red, crimson, and golden yellow foliage; and is the finest variegated Geranium we ever saw for conservatory decoration, and thrives equally well in the open air, and developes its rich combination of colours to greater perfection; in addition to its exquisite foliage, it produces fine trusses of bright scarlet flowers.

While I have been penning the above, I have been thinking of a new variegated plant for edging, and one that I do not remember having seen mentioned in these pages, it is the variegated Ivy; it might be used as a permanent edging plant, and when the half-hardy bedding plants were removed in the autumn, their place might be filled up with dwarf coniferous plants, or any other dwarf evergreens, and the variegated Ivy, as an edging, would produce a charming effect. I think that Mr. Beaton ought to take the subject in hand, and if the merits of the variegated Ivy are but duly appreciated, it will [illegible] [illegible] important [illegible]

[illegible]

[illegible] generally [illegible] favour [illegible] from the num[illegible] disparagi[illegible] made during the past season. M[illegible] Beaton [illegible] only an offspring [illegible] [illegible] leashing of the jacket [illegible] of dissipated [illegible]

sprawling, cavalier-like flowers; more ugly than the shut-up form, if anything can be more ugly.

I have been intensely disgusted with Gazania this season. I edged three vases with it, and they were all very well in the early part of the day; but when visitors began to arrive in the afternoon, and cool of the evening, then Gazania was not to be looked at, except in its porcupine state—looking like multiplied starfishes, in that contracted state which a dose of strychnine is said to put its victims in. Now, I can conceive Gazania being quite at home amongst Ferns on rooteries in that cool moist shade that this tribe chiefly like; or, as a bedder round fountains, or as a decorative plant in wilderness embellishment, or in gardens on stiff cold soil, or it would serve that gardener's turn well who wanted a great display in September; for, its appearance during the last September melted me into such a charitable mood that I was near altering my previous judgment. Now the frost is gone Gazania is black.

The enclosed leaf is from a Camellia Juliette, bought at the sale of a gentleman's stock near Nottingham. On the sale day a strong biting north-easter was blowing (April), and the Camellias had only just made their new wood; they were put out on the lawn for the convenience of arranging in lots. I noticed this peculiar indentation on the new leaves, and the yearly growth during three successive years is always the same. What is it? Does this account for its backwardness in growth and blooming? It is the latest we have.—N. H. P.

[We think Mr. Beaton put Gazania splendens in its proper place when he said it was the best bedding plant of that colour for fashionable private gardens, when the company "go round" in the forenoon; and about one of the worst for public gardens, because the public go round in the afternoon when all Gazania flowers, and many others, are closed. Camellias with serrated leaves like the one you sent are plentiful. Indentations on such leaves are no mark for identification.]

AUTUMN-FLOWERING CINERARIAS.

All who have a large space of glass to decorate with flowers, know well what a hard matter it is to find plants to do so in the autumn. Having felt this want myself, I looked at all plants that had the appearance of affording me a resource, from which I might be aided to fill up this gloomy gap. I did not look in vain, as the details of growing the Cineraria for that purpose, here given, will show.

I do not assume that this plan of growing them is new, but I have never seen it practised by any other gardener, so that a few hints on the subject may not be uninteresting to some of your readers.

I sow seeds in March—the middle of the month is best—in a seed-pan, placing it in a gentle hotbed, with the usual care required for all small seeds. The seedlings will by the end of April be large enough to place in small pots. This done, place them for a few days longer in this mild heat, and then remove to the best of all places for growing the Cineraria in pots—namely, the cold frame. Here they are to remain till all danger of frost is past. Then prepare a piece of ground, the size of which must be determined by the number of plants you intend to grow, by giving a covering of 6 inches of good mellow loam—rotten manure and leaf mould on a north border—and this well forked in will not fail to produce fine plants.

The ground ready, the first week in June is early enough to turn the plants out of their pots into the border. Eighteen inches apart are not too far to allow the free use of the hoe, and for copious waterings, which they must receive in dry weather.

Some precaution will be necessary, on their first turning out, to prevent the attacks of vermin, &c.; but with the above previous preparation, little will be required to be done to them till the middle of September, at which time, if they have progressed satisfactorily, they will exhibit unmistakeable signs of flowering; —not mere resemblances of flower-stems, and flimsy side shoots, but fine stout robust plants, which if carefully taken up and potted, will produce flowers equally good, but larger and more numerous, than those produced from pot culture.

Little remains for me to add, but that they must return there again to their old favourite quarters, and from there to the greenhouse, conservatory, or sitting-room, and if the heat of these places can range from 45° to 50°, a fine display of bloom can be obtained through the dullest months of winter.—J. C. C.

[illegible]

THE IN-DOOR PLANT CASE.—No. 4.

(*Continued from page* 166.)

Amongst those persons who are fond of plants, and who delight in the beautiful shapes, and in the sweet scent of flowers, how very commonly we hear the remark, that they cannot possibly have flowers in their rooms, because they are so busy, or so much away from home, that it is really hopeless to look for success in growing them. Some die for want of water, and others because they have been soaked too much; some are scorched up by the dry, hot air; and others, again, require more heat than they can receive in sitting-rooms. A Fern shade is generally the last thing tried, and even first-rate gardeners find that this needs some attention to keep the fronds in freshness.

Yet, it is hard to be quite deprived of flowers. There is something pleasant even in the thought of having them growing round us.

I should like, then, to describe a very easy plan, one that ought not to come to any damage in the owner's absence from kindly meant, but mistaken over-care, and one that is capable of affording very great delight in return for only some rare half-hours' tendance. I have had myself a Fern-case with a few little flowers also, the inside of which was certainly never touched more than once a-week.

My plan used to be to water the Ferns a little, and to moisten the sand fairly in the box, then to place the upper glass so as to allow a little air to enter, and thus even when heat was given I have left my plants untouched for a fortnight, or even for a still longer time, while the rarest thing has been to open it within the week. My own great delight is in a case of Ferns and blue Lobelias, small red Geraniums, Anemones, little Blue Bells or Snowdrops, and the white waxen Cyclamens with their deep rose-purple blotch. Flowers such as these grow so very charmingly, and look so at-home with Ferns, and though I know a great deal is said of the current of air required by all Cape Heaths, I have certainly known some bought just in blossom, which have continued opening out their lovely spikes of flowers, and have looked most thriving for a very long time indeed. They cannot, however, bear a moist air at all; they lasted so well, only when vapour was scarcely present, and where, though the Ferns that filled the case were standing in moist sand, not very greatly watered, the Heath itself was sunk in a double pot. Where a pot is thus protected from a current of dry air, the roots are large enough not to dry up suddenly. The double pot is, therefore, in this case needed for protection from over-moistness. Pots (small 60's) containing two red Van Thols, a tumbler full of Snowdrops or of Scillas dropped in here and there, a little blue Lobelia, or, as I said, an Erica, are amply sufficient for lighting up the case, and when these flowers are used, the usual treatment of the Ferns may in every respect be continued without the slightest reference to these things while in blossom.

I am at present so occupied with experiments that I can hardly keep one case for mere ornament; my principal case containing Dracænas and Begonias, Ferns and Camellias, in a most promiscuous array. The Camellias, however, open out most charmingly above the Ferns at one end, while Begonias, Dracænas, Gesneras, and Lycopodiums thrive delightfully at the other. I mention this because Camellias, and Ferns, and Begonias are not more alike than Ferns and Heaths, and yet both are thriving. At the warmer end of the case the stove Ferns do best. Pteris tricolor is a little gem in front; P. argyrea waves its beautiful striped fronds high over head; and Adiantum formosum, my favourite Fern of all, Adiantum cuneatum, and A. setulosum, are rising from a thick green carpet of most thriving moss. Selaginella Lobbi grows up tall and stemmy, and then droops down a Fern branch, whose crumpled edges catch the light, like dew drops. Some Davallias are beautiful at the other end, and several Chinese Primroses continue in splendid blossom. This case, therefore, I cannot call a fernery.

The main difficulty in keeping Ferns in winter arises; (as I have been told by first-rate Fern growers, as well as having observed it in my own plants repeatedly} from the difficulty of "ousting" the moist, damp, clinging, unhealthy vapour which stands stagnant about their stems, bathing the leaves in a most unwholesome bath.

Many Ferns, of course, do not require heat, and thus, of course, no heat is provided for them. They do require moist air, and that they have abundantly; but then arrives one of those damp, dark spells of gloomy, foggy weather; warmth is not wanted actually, but a change of air is necessary; moisture is still required, but that which has been loading all the air so long is a simple poison.

To open the cases to the air of rooms which in such weather we naturally heat and dry, is a certain evil; to leave things as they are, results in decay and blackness.

It is here, then, that the heating apparatus, even for a Fern-case, seems to me so necessary. The constant upward tendency of the freshly-warmed air drives out of course, or circulates all the vapour clinging to the leaves, which is in its turn rapidly dried, or, at any rate, changed and purified. The heat need not be maintained if the Ferns are so hardy that it is not required; but I confess I have seen but few which do not thrive the better for a little warmth.

My acquaintance with Ferns is, however, limited. I have a few great favourites, and to them at present my collection has been confined. I may as well mention, also, that my Fern-growing began in a most unorthodox manner; merely a few pots put in amongst other plants, and my knowledge of their culture is utterly and entirely picked up and purchased by experience.

For potting Ferns I find nothing at all comparable to charcoal drainage over a single potsherd or zinc cap, then a handful of cocoa-nut fibre, and then a soil made of two parts of cocoa-nut dust to one of sand, charcoal, and peat soil, or failing that leaf mould. I have, however, often bought soil at nurseries, and, perhaps, the leaf-mould from thence is really mixed-up soil.

The cocoa-nut refuse can be obtained at Kennard's, Swan's Place, Old Kent Road, at 6*s.* a hundred-weight. It is exceedingly light, so a small quantity would go an immense way in potting.

I proceed now to name the Ferns and Fern-allies which I have found to be sufficient for a four-foot case. All those marked 1, should be at the warmer end, but a layer of damp sand must protect the pots from resting immediately on the hot-water tank; 2, will indicate the more hardy kinds.

1. Adiantum cuneatum, suspended or in pot.
1. A. formosum.
1. A. setulosum.
1. Pteris tricolor.
1. P. argyrea.
1. Davallia dissecta.
1. D. bullata.
1. Lycopodium cœsia.
1. Selaginella Lobbi.
2. Davallia canariensis.
2. Lastræa filix-mas.
2. Adiantum capillus-Veneris (Maiden-hair).
2. Pteris serrulata.
2. P. geraniifolia.
2. P. hastata.

For both ends the Lycopodium denticulatum makes the best of carpets, if kept well watered, and forced to lie on the surface. If it sweeps down the side of its own pot it rapidly decays in the dark and damp.

The Ferns I have mentioned are enough for a charming group. There should, however, be one added for the centre, if a Heath is not placed there, which must be chosen specially for its waving Palm-like shape.

For flowers to keep up as an under-growth, I have already mentioned blue Lobelias, Scillas, Snowdrops, and red Van Thol Tulips with the lovely little Persian Cyclamen as amongst the most charming for the cooler end. At the other end I fancy nothing would be more suitable than the little plant suggested last week by one whose suggestions would carry with them weight. I allude to the Stenogaster concinnum, for which plant-case possessors should be on the look out.

There are also several low-growing or trailing plants with bright-coloured blossoms, either of blue or white, which would enjoy the warmth, and look most charmingly peeping amidst the Ferns.

It will be understood in this instance that I have taken for granted that the case is heated; not, perhaps, to a great degree, but at least made warm enough to cause the stove Ferns to thrive.

If hardy or greenhouse Ferns should be used exclusively, with Snowdrops and Scillas for their bright specks of colour, the warmth is of course unnecessary, except in the days when the damp, stagnant atmosphere must at least be banished.

The list I have given is a very small one, just things that I know well, for a single group, for my knowledge of Ferns is so little extended, that it is very likely many charming sorts are still quite untried by me in these cases; if so, however, I may hope in future to be able to add many other lists, as each sort is proved as to its peculiar growth.—E. A. M.

WINDOW PLANTS.

I LIVE in a row of houses facing about south-east, and am anxious to have flowers in my window. The ordinary plan is to benefit passers-by, but I want it for my own pleasure. Could any correspondent kindly suggest some structure to be placed outside, which would not be a dis-sight; so that by opening the lower part of the window it would give one the benefit of the plants, and at the same time avoid the dust, &c., of the room? It must, of course, fit close so as to exclude draught.—X. T.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE November Meeting of the Entomological Society was held on the 4th ult. The President, J. W. Douglas, Esq., being in the chair.

Mr. Kirby exhibited a large box of Butterflies and Moths from North America. And Mr. Samuel Stevens a fine collection of insects of various orders, sent from Japan by Mr. Fortnum, including many species of great rarity, including the singular Damaster Blaptoides (one of the Carabideous Beetles), two new species of the genus Papilio (one of them allied to P. Paris, from China).

Mr. Adam White exhibited some interesting insects of various orders, collected by Mr. Rayner, surgeon of H.M. ship Herald, during its voyage to the South Sea Islands; likewise a fine, new, and undescribed species of Bombyx, brought from India by General Sir J. B. Hearsey, for which he proposed the specific name of Hearseyii.

Mr. Reading exhibited fine examples of Leucania putrescens and other Lepidoptera, from Torquay and other parts of the south of Devonshire.

Dr. Knaggs exhibited the cocoon, or moveable case of a very singular shape, formed by the caterpillar of a species of Psyche, from Australia. And Mr. Miller exhibited some living caterpillars of a species of Incurvaria (a genus of minute Moths), found feeding on fallen leaves.

Mr. Desvignes communicated descriptions of two new species of Ichneumonidæ, belonging to the genus Ephialtes.

Mr. MacLachlan read a paper on the British species of Phryganeidæ contained in the genus Stenophylax of Kolenati.

Mr. Adam White made some observations on the injury, amounting to several thousand pounds per annum, caused to Ginger brought to this country from the East Indies, by a small Beetle belonging to the family Ptinidæ, the Lasioderma testaceum of Stephens; and to Macaroni, by Sitophilus Oryzæ (a small Weevil allied to the Calandragranaria).

Mr. Tegetmeier called attention to a statement respecting the development of the queen bee, lately published by Professor [illegible], who asserts that the production of the perfect queen is due, not as has been supposed, to the larvæ being fed on a peculiar food, but an increased temperature, and that the isolated position of the royal cell enables the worker bees to cluster around it, and by their rapid and increased respiration to produce the degree of heat necessary. Mr. Tegetmeier stated that his own observations tended fully to support this theory.

Mr. Waterhouse read the description of two curious Curculionidæ, from Van Diemen's Land and Adelaide, on which the claw-joints of the tarsi are wanting.

Mr. Janson read some observations on two species of British Staphylinidæ—Homalota subterranea and Haploglossa pulla.

The Secretary announced that a new Part of the Society's "Transactions" was ready for delivery to the Members.

WORK FOR THE WEEK.

KITCHEN GARDEN.

IF frost should set in every advantage must be taken of it, to wheel manures and composts on the various quarters requiring it, and if it cannot be trenched in at once let it be laid in heaps at convenient distances, and covered with soil. Ridged ground may also be occasionally forked over and knocked about to expose fresh surfaces to the action of the atmosphere. The occupation of the ground by crops suitable as food for a variety of insects, in the course of a series of years, brings a vast amount of such depredators into a garden. The invention of methods for their destruction often taxes the ingenuity of a gardener to a considerable extent. The analogy existing between insect and vegetable life restricts the choice of means, for that substance which may be provided for the destruction of the insect may injuriously affect the health of the vegetable. Hence the necessity of caution in the use of materials. There is, however, one substance not open to any objection, which may now be used with advantage in land from whence the crop has been removed—viz., lime. Ground cropped the preceding season with Carrots, Parsnips, or Potatoes, and found (as is frequently the case at this time) infested with insects, should have a good dressing of lime dug in. *Beans*, where they have been planted in rows and have made their appearance above ground, draw the earth in ridges on each side of them, so as to afford some little protection from cold cutting winds. Peas in rows should be similarly treated. *Cauliflowers*, watch narrowly for slugs amongst the young plants, and keep them free from dead leaves. If any are planted in pots for the purpose of protecting them during severe weather, they must be carefully attended to with water, or in the spring it will be found that the time and trouble given to them had been uselessly expended. *Lettuce*, the young plants in frames to have all the air that can be given them in mild weather. Keep them and also those on the borders free from dead leaves and litter of all sorts that is likely to harbour slugs. *Rhubarb*, take up and pot old roots for forcing if required, or they may be laid in a Mushroom or any other house where heat is applied, and slightly covered with soil. Surface-stirring amongst young growing crops should now be as diligently followed up as in the summer when vegetation is more rapid. Indeed, there is no season, if the weather is favourable, when those operations should be neglected; frequent pulverisation of the soil acts as a great check to the penetration of frost in winter, and to the evaporation of moisture in summer.

FLOWER GARDEN.

Except alterations are on hand, there will be but little requiring attention here at present beyond the cleaning up of leaves, and putting the borders, &c., into order. Sweep and roll the walks frequently so as to keep them clean and smooth. Turf will also require rolling frequently to keep it smooth. Collect as many leaves together as possible, they are valuable for mixing with fresh manures for fermenting purposes, as they not only correct its rank and violent fermentation, but preserve in it a more steady and uniform heat for a greater length of time, or when allowed to decompose in a heap for mixing with the soil in the flower-beds and borders.

FRUIT GARDEN.

Proceed with the planting of fruit trees in open weather, and if the soil is old let each tree have a good portion of fresh soil, maiden loam, if possible, about its roots. The pruning and nailing of all sorts of fruit trees, except Peaches, Nectarines, and Apricots, to be regularly prosecuted. By performing whatever can be done now, a greater margin will be left for the more busy operations of spring.

STOVE.

[illegible] to former directions, except that it will be well to reduce the temperature 2° or 3° night and day. Keep all plants that are making growth at the warmest, and all such as are well ripened off at the coolest and driest end of the house.

GREENHOUSE AND CONSERVATORY.

A little fire heat will be necessary here during cold, damp weather, to allow the admission of fresh air to carry off superfluous moisture without lowering the temperature too much, to be applied during the day, and all watering to be done in the morning, that the atmosphere may get moderately dry before night; as a damp, stagnant atmosphere is especially injurious to flowers—such as the early Camellias, whose blooms soon become spotted and decay when the air is damp. Pelargoniums to have their shoots thinned and neatly tied out to stakes. Keep them thin to produce stocky plants, and fumigate or apply Gishurst on the first appearance of green fly. See that the young stock of Heliotropes, Cyclamens, Chinese Primroses, Ageratums, Scarlet Geraniums, and other plants, gown especially for winter decoration, have nice, light situations, and regular attention, as regards watering. As many plants suffer from drip at this season, a careful look out should be kept, and either the cause remedied or the plants removed.

FORCING-PIT.

The following things may be introduced to heat if not already done. Rhododendrons, Azaleas, Kalmias, and Persian Lilies, Sweet Briars, Moss and other Roses, Daphnes, Anne Boleyn Pinks, Dutch bulbs, &c., if they had received the necessary treatment through the summer.

PITS AND FRAMES.

If former directions have been carried out, the plants in these structures will present a dwarf and robust appearance, thus being well fitted to bear privation of light for some time, if severe weather should ensue. Damp has accumulated very much of late, owing to the heavy rains with which we have been visited. This may be removed by giving air at top on sunny days, but where the pits are heated with flues a dry atmosphere may be obtained by putting on slight fires, at the same time allowing a free circulation of air amongst the plants. This will also remove all damp from the inside of the flues and put them in proper order, so as to be ready when severe frosts set in.

W. Keane.

DOINGS OF THE LAST WEEK.

The doings of the week are pretty well a counterpart of those of the last. Protecting Cauliflowers and Lettuces from frost, giving plenty of air when fine. Pruning and nailing fruit trees out of doors. Tying Peach trees in house in wet days. Pruning and clearing second vinery, and filling the floor with old Geraniums, and the shelves with young Scarlets taken up from a bed out of doors, where they had been rooted with glass over them, so that they might be safer in the house, and save us the trouble of covering them. They were inserted in the bed in the autumn to save time, and also because at that time pots and boxes were scarce. Took most of the leaves off the Figs, find that the Figs now sent to table come out again uneaten, a sure sign they are not worth eating. Will remove all bigger than a pea or small bean, and let them rest until early in spring, keeping the plants just as dry as the plants will not suffer from drought. Wheeled manure in frosty mornings, and took every favourable opportunity to get the pleasure ground cleared up for the winter, the ground being damp enough for digging.—R. F.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Vallota purpurea Culture (*A New Subscriber*).—The treatment of Vallota purpurea is the same as the treatment of Agapanthus umbellatus in every respect; and the treatment of both is very nearly if not the very same as the treatment of a pot Tom Thumb Geranium the year round, only that Tom would stand more heat with less harm than the Vallota. As for the size of pot, small bulbs of Vallota require little pots, as No. 60's; half-grown bulbs to be in 48's; and full-grown ones to be in No 32-pots. Vallota never goes to rest and is very thirsty in summer; and young bulbs will grow and increase in size in one-half the time if they were planted out in warm borders when the bedding-out is finished at the end of May, and to be taken up with the bedding plants in October. That is the sure way to get bouncing bulbs of Vallota, and of Sprikelia or Amaryllis formosissima, in the shortest time from the smallest fry of offset bulbs. The Vallota blooms from June to October—that is, some of the bulbs will flower in June, some in July, and some in August and September.

Coal Ashes for Protection (*Idem*).—They are famous protection to bulbs against frost; but Ranunculus, Tulips, and Crocuses do not require such protection at all in any part of the three kingdoms, and they do much better without it.

Watering Camellias (*Idem*).—Camellias that are full of blossom-buds and have healthy roots require as much water as an Oleander would need in May and June, and liquid manure is not good for any one plant under the sun in our climate between the autumnal and spring gales or the equinoxes. The buds of your Camellias last year fell off from one of two causes—very bad roots, or a very poor supply of water which was too rich.

Seedling Cactus (*An Amateur*).—We heard no more of that seedling from Cactus or Epiphyllum truncatum. All that breed flower in the winter and are dry stove plants. The greenhouse Cactuses—or tall Cacti, as they schedule them for competition—flower late in the spring. No mode of treatment that we know of will cause either of the sections to change their time of flowering beyond a few weeks later or earlier than their usual time.

Camellia in a Dwelling-house (*R. W. Glossop*).—You will see an answer to another correspondent, which will instruct you what to do. Keep it as cool as you can without being frosted, and the leaves frequently sponged with tepid water. For ten penny postage stamps you could have from our office "Window Gardening for the Many," which will tell you how to manage throughout the year.

Work on Plant Propagation (*An Amateur*).—Our "Garden Manual" gives directions for the propagation of all garden plants. So does the "Cottage Gardener's Dictionary." Either can be had free by post from our office. The Manual for twenty penny postage stamps, and the Dictionary for sixty-eight.

New Grapes (*Thomas Higgins*).—We cannot say where you can ge plants of the Grapes you refer to. We would advise you, as a rule, always to consult those nurserymen who advertise fruit trees in our columns. They have all respectable establishments, and if one or other of them cannot supply you, they will either obtain the trees for you or tell you where you can get them. The Pear Doyenné Dofais and Huyshe's Bergamot can be had from any of those parties. They are now pretty generally grown in nurseries.

Fruit Trees (*J. Z., Chelsea*).—We would recommend you to have Pears instead of Cherries, and these should be—Marie Louise, Winter Nelis, Josephine de Malines, Knight's Monarch, and Beurré de Rance. The two Plums should be Green Gage and Coe's Golden Drop.

Gardener Emigrating (*J. F., Liverpool*).—We studiously refrain from recommending any place as desirable to emigrate to. So much depends upon circumstances of which we have no information. Mr. Appleby some time since pointed out Canada as most desirable for a practical gardener.

Gishurst Compound—Greenhouse Climbers (*H. B.*).—If the Gishurst is not too strong it will do no harm by falling on the soil in the pots. The Cobœa scandens would suit you if not too strong, and it is rather herbaceous. The Cissus antarcticus would do better—a close evergreen and little liable to insects. We have seen the Cobœa fine in such a position.

Verbenas Damping in a Pit (*H. Jones*).—You have allowed the Verbenas to get too damp in the frames, and we think they have a little both of mildew and thrips on them. The thrips will soon finish them of itself. We would advise the following. Take two ounces of flowers of sulphur, work it up into a paste, and pour on that a quart of boiling water, stir and let it settle, and when cool pour off the clear yellowish water, boil two ounces of tobacco in half a gallon of water, strain, and when cool add the sulphur water and tobacco water together in a basin; and putting the fingers through the plants in the pot to prevent the soil coming out, turn the pot topsy turvy, and draw the heads of the Verbenas several times through the liquid, and then set them in a shady place for a day; then lay them on their broadsides, and syringe the heads well with water at 100° without wetting the soil. When dry take off a little surface soil, and replenish with fresh silver sand, fresh soil and charcoal dust, and keep them airy afterwards. Thrips should be looked after when making cuttings.

Strawberry-bed (*Strawberry*).—If you have no other Strawberries than those in pots, you may turn out those strong plants in the garden. But if you have plants already we certainly should take the first crop from them in-doors, as then they will give as good a crop in 1863, when turned out after being in the house, as they will do when turned out now.

Slowly-burning Fuel—Large-leaved Oaks (*A. R.*).—You may do much with wetting the ashes, and covering up nicely, and regulating the damper; but you cannot have all advantages in any human contrivance. To secure what you want make your furnace large enough to have a good rest at back or sides, where the bars do not go, and thus go to more expense for bricks to save a little trouble in the morning. The Oaks for your purpose would perhaps be Quercus obtusifolia, rubra, nigra, tinctoria, imbricata, æsculus, cerris fulhamensis, cerris Lucombeana, robor salicifolia. Ægilops is hardy.

Old Vine-border (*A Young Gardener*).—Your plan is a very good one. We suspect the fruit-border was too small and not deep enough. The making of the border above the ground level was a good one, and the less you sink below the better you will find it. You may do all you propose and sink much less—18 inches of such soil would even do. Use plenty of the old mortar, and in such soil but little of leaf mould and dung. It is easy to enrich from the surface. There will be more said on borders in a week or two.

Span-roofed Conservatory (*P. Loye*).—We do not think that there is anything the matter with the house. There can be none too much glass if, as we presume, the back upright is wall. Have you enough of air at the top? 40° is low enough long continued to have plants to bloom in winter. 45° at night is better. The Fuchsias blooming depends a good deal on the ripening of the wood and shoots. We think in such a house they could scarcely fail. The Pimeleas, Azaleas, &c., depend on being well sunned and aired to set the buds. We wish we could say more to suit you. Do you give air freely in front in summer especially, and now in fine weather?

Converting Part of a Greenhouse to a Stove (*J. Whitehead*).—You might have a sliding iron across the flue at the division, and run the flue there across the house in the ten-feet division, so as to heat that independently of the greenhouse. When both places needed heating the slide would regulate the amount of heat to each. This would be the simplest mode. The next would be to have a small boiler over the furnace with two pipes leading to a small wood tank covered with slate. We have said so much on tanks lately, and mode of making, &c., that it would not be worth while repeating them. Without the tank you might make the flue double in the hothouse part, having it in the middle as well as at the end.

Pruning Veronicas (*L. K.*).—If the Veronicas are the shrubby New Zealand kinds, they should be pruned back after flowering as close as Pelargoniums, unless you are aiming at large bushes of them, then the pruning need be no more than one-half of the strongest and next strongest shoots cut off, and all the very small ones got rid of altogether, by cutting them close to the main leaders. But recollect this difference in the pruning for two objects. There are many "small yellow Cytisuses," some of which are hardy in England, and some are not so. Not knowing either your kind, or where you write from, we cannot say if your kind of Cytisus is hardy or not. The same observation applies to the Veronicas, they are hardy in some places and not hardy in other places. Your place we do not know, and, therefore, we cannot answer the question.

Names of Fruit (*Tyro*).—No. 1, Golden Noble; 2, Golden Reinette; 3, Downton Nonpareil; 6, Scarlet Nonpareil. (*P. B.*).—1, Beurré Rance; 2, Glou Morceau; 3, Winter Nelis: 4, Ribston Pippin; 5, Cockle Pippin 6. Dumelow's Seedling; 7, Winter Codlin; 8, Monstrous Leadington. (*S Molton*).—A, Conseiller de la Cour; B, Passe Colmar; C, Duchesse d'Angoulême. (*Linda*).—Your large red Apple is Hollandbury; and the small russetty one is Sam Young, a delicious dessert Apple when kept till spring. (*T. F. Lombard, Dublin*).—Your Pear is Beurré Diel.

Names of Plants (*J. F.*).—It is not Osmunda regalis, but it is Onoclea sensibilis, which has distinct fertile fronds. (*Mary Anne*).—Yours is Ansellia africana. (*W. H. Mayne*).—Both 1 and 3 are forms of Lastræa filix-mas, and both belong to the var. paleacea, though differing so much in colour and habit. There is a great variety in Ferns of the same species and the same variety within certain limits. Your plants, no doubt, came from distinct wild habitats, and hence the variation between them. 2, Lastræa dilatata; 4, Polystichum angulare.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE BIRMINGHAM POULTRY SHOW.

Everything is comparative. We can compare ourselves with the *Times*. It is not far from Fleet Street to Printing House Square. The man meeting three ribs of beef and potatoes on their way from the baker's (who has not wished when meeting such on their way from church Sunday morning, to help him or herself to one of the smoking, glistening vegetables?) said it was just what he had had for dinner barring the beef. Men have written beautiful and touching things about their return to home and country. Eloquent things have been said about the emotion experienced by old men when they have revisited their colleges for the first time since they left them in youth. Their university lives arise before them, and involuntarily they reckon the years that have passed since they were there, and it may be they ask themselves whether the grey heads, perhaps the bald ones, the eyes that refuse their office without assistance, and the frame that asks for a little more covering every winter, can belong to that bold, bright young fellow, whose portrait still hangs up in the room which "erst he did inhabit." Successful institutions are like the national debt. The men who help to build, who foster and encourage, pass away with their generation, but the *institutions remain and flourish*. Shakspere calls two universities twin sisters. We hope the national debt will never have a family.

Our present comparison is, that our feelings are something akin to these when we approach Bingley Hall. The first crowing of the cocks that salutes our ears carries us back thirteen years, and reflection not only causes surprise at that which has been accomplished, but it raises our admiration at the perseverance and constant wisdom that have dictated all the resolves of the Council that directs this large undertaking. A poultry and cattle show in the ordinary acceptation of the words does not [illegible] a very large space in men's minds. At Birmingham it comes somewhere about, rather before Christmas, and is associated with goose clubs, displays of fruit in grocers' windows, fat meat, [illegible] boughs [illegible] ly and mistletoe. Hotels are too full; thirty [illegible] people throng the streets, and it is the busy [illegible] of the [illegible] shopkeepers. No one would deny that [illegible] bout the funds that support it, and do not trouble themselves think how it is carried on. Prizes amounting to more than 1000; a Show that involves the absolute necessity of a *body of police;* a heavy policy of assurance; a supply of food that reminds any one of the provision made by a city in expectation of a siege; a numerous staff of volunteers to direct, and paid men to carry out an amount of actual labour no one would believe unless they saw it, or participated in it; a heavy responsibility, both mental and pecuniary; all these things form the Birmingham Show, and involve the necessity of constant care, foresight, and supervision. The correspondence and the accounts are voluminous, and the Show of 1861 is hardly closed before the Council meets to consider that of 1862.

If there was ever a time when this great Meeting assumed more than usual importance, it may safely be said it is the present. There is more thought of poultry now than there ever was in the memory of man, and it is assuming the proportion of a food question. The exhibitions that have sprung from that which held its first meeting in Birmingham fourteen years ago, have done for poultry that which the agricultural meetings did for cattle. They point out the breeds that suit certain climates and soils, and, quite as important, they prove which make the best and speediest return in the way of food for that which they consume. If we were to view the question in a less serious light, we would say the originators of, and those who carry on this monster meeting, cater for the pleasure of many of our best and highest in rank and worth. They have provided a healthy recreation, and a competition which has no bitterness. The single-minded men who founded this Show may find their reward in the perusal of the lists of exhibitors and subscribers, and the unrivalled attendance of the week, especially the private view on Monday.

Seeing the poultry is not judged till Saturday, and that this must be in the printer's hands early on Monday, we are compelled to confine ourselves to these general remarks. We must defer our review of the classes till next week, when we hope to give the detail of increasing success, and to record that the exertions of our good friends who devote so much of their time, means, and talents to this useful work, are appreciated by those for whom they labour, and supported accordingly.

The following is the list of awards of the Judges:—

Dorkings (Silver Grey).—First, Mrs. F. Blair. Second, Mr. Arnold. Third, Mr. Drewry. Fourth, Lady S. Des Vœux. *Chickens.*—First and Third, Mr. G. Cargey. Second, Hon. Lady Bagot. Fourth, Mrs. F. Blair.

Dorking (Coloured except Silver Grey).—First, Mr. A. Potts. Second, Capt. Hornby. Third, Mr. C. H. Wakefield. *Chickens.*—First and Cup, Capt Hornby. Second, C. H. Wakefield. Third and Fourth, Hon. W. W. Vernon.

Dorking Hens (any variety).—First, Lady L. Thynne. Second, Capt. Hornby. *Pullets.*—First, Capt. Hornby. Second, Mrs. Blair.

Dorking (White).—First, Mrs. Henry Fookes. Second, Mrs. M. A. Beardmore. *Chickens.*—First, Capt. H. Townsend. Second, Mrs. M. A. Beardmore.

Spanish.—First, Mr. John Martin. Second and Third, Mr. R. Teebay. Fourth, Rev. C. Lowndes. *Chickens.*—First, Mr. S. H. Hyde. Second, Mr. J. R. Rodbard. Third, Mr. Henry Lane. Fourth, Mrs. R. Teebay. *Hens.*—First, Mr. J. K. Fowler. Second, Mr. Geo. Garlic. *Pullets.*—First, Mr. J. R. Rodbard. Second, Mr J. K. Fowler.

Cochin-China (Cinnamon and Buff).—First and Cup, Mr. Henry Tomlinson. Second, Mr. Thomas Stretch. Third, Mrs. Henry Fookes. *Chickens.*—First and Cup, Mr. Henry Tomlinson. Second, Mr. Thomas Stretch. Third, Mr. J. W. Kellaway. *Hens.*—First, Mr. Charles Felton. Second, Mr. Thomas Stretch. *Pullets.*—First, Samuel Statham, Esq. Second, Miss V. Musgrove.

Cochin-China (Brown and Partridge-feathered).—First, Second, and Third, Mr. Cartwright. *Chickens.*—First, Mr. E. Tudman. Second, Mr. T. Stretch. Third, Mr C. Felton. *Hens.*—First, Mr. Cartwright. Second, Mr. T. Stretch. *Pullets.*—First, Mr. T. Stretch. Second, Mr. Cartwright.

Cochin-China (White).—First and Second, Mr. R. Chase. *Chickens.*—First and Second, Mr. R. Chase.

Brahma Pootra Fowls.—First and Second, Mr. R. Teebay. Third, Mr. J. H. Craigie. *Chickens.*—First, Mr. R. Teebay. Second, Lady Louisa Thynne.

Malay.—First and Second, Mr. Charles Ballance. *Chickens.*—First and Second, Mr. N. Sykes, jun.

Hamburgh (Golden-pencilled).—First, Mr. E. A. Wilkinson. Second, Mr. James Munn. Third, Mr. John Lowe. *Chickens*—First, Mr. E. A. Wilkinson. Second, Rice R. Clayton, Esq. Third, Mr. James Munn.

Hamburgh (Silver-pencilled).—First, Mr. D. Harding. Second, Mr. W. H. Kerr. Third, Master T. B. Keable. *Chickens.*—First, Mr. John Martin. Second, Mr. Jas. Munn. Third, Mr. D. Harding. *Hens.*—First, Mr. W. H. Kerr. Second, Mr. Jas. Munn. *Pullets.*—First, Mr. Jas. Munn. Second, Mr. Fred. Welstead.

Hamburgh (Golden-spangled).—First, Mr. N. Marlow. Second, Mr. W. B. Lane. Third, Mr. W. C. Worrall. *Chickens.*—First, Mr. S. H. Hyde. Second, Mr. J. Davies. Third, Mr. Jas. Dixon.

Hamburgh (Silver-spangled).—First, Mr. J. Fielding. Second, Mr. James Dixon. Third, Right Hon. Countess of Dartmouth.—*Chickens.*—First, Mr. James Fielding. Second, Mrs. Pettat. Mr. William Joshua. *Hens.*—First, Mr. H. W. B. Berwick. Second, Mr. W. R. Lane. *Pullets.* First, Mr. J. Davies. Second, Mr. J. Fielding.

[illegible] Black and White Crests). First, Mr. James Dixon. Second ird, Mr. T. P. Edwards. *Chickens.*—First and Second, J. G. Sugden, Third, Mr. T. P. Edwards.

NDS (Golden).—First and Second, Mr. James Dixon. Third, Mrs. *Chickens.*—First and Third, Mrs. Pettat. Second, Mr. J. Dixon.

NDS (Silver).—First, Mr. G. C. Adkins. Second and Third, Mr. J. *Chickens.*—First and Third, Mr. G. C. Adkins. Second, Mr. J. Dixon.

OTHER DISTINCT VARIETY.—First, Mr. Jeffrey Ashcroft. Second, . Finch. Third, Mr. Cam Baker.

s (Black-breasted Reds)—First and Cup, Mr. W. Robson. Second, urth, Mr. E. Archer. Third, Mr. G. W. Moss. *Chickens.*- First, Mr. bbs. Second, Mr. W. Hopkinsen. Third, Mr. W. Dawson. Fourth, V. W. Vernon.

s (Brown and other Reds, except Black-breasted).—First and Mr. G. W. Moss. Second, Mr. James Fletcher. Fourth, Mr. Wood. *Chickens.*—First, Mr. James Wood. Second, Mr. Edward . Third, Mr. G. W. Moss. Fourth, Mr. George Cargey.

s HENS (Black-breasted and other Reds).—First, Mr. G. W. Moss. , Mr. J. P. Smith. *Pullets.*—First, Mr. George Cargey. Second, P. Smith.

s (Duckwings and other Greys and Blues).—First, Mr. John ster. Second, Mr. John Hindson. Third, Mr. Richard Swift. , Mr. James Fletcher. *Chickens.*—First, Hon. W. W. Vernon. , Mr. John Dancaster. Third, Mr. Thomas Carless. Fourth, Coln. ckburn.

s (Black and Brassy-winged except Greys).—First, Mr. James y. Second, Mr. William Dawson. Third, Mr. G. Helliwell. *ns.*—First, Mr. T. Burgess, jun. Second, Mr. W. Dawson. Third, mes Fletcher.

s (White and Piles).—First, Mr. J. Camm, Second, Mr. William nson. Third, G. W. Moss, Esq. *Chickens.*—First, T. H. D. Bayley, Second, Mr. George Crofts. Third, Messrs. Bullock & Rapson.

s HENS (except Black-breasted and other Reds).—First, Mrs. T. n. Second, Mr. F. Munn. *Pullets.*—First, G. W. Moss, Esq. , Mr. H. Baker.

CLASSES FOR SINGLE COCKS.

KING (Silver Grey)—First, Right Hon. Lady Bagot. Second, Mr. Cargey. Third, Mr. W. Dolby, jun.

KING (except Silver Grey).—First, Lady Louisa Thynne. Second, ward Tudman. Third, Mr. Joshua Whittington.

ISH.—First, Mr. Henry Lane. Second, Mr. David Harding. Third, Heaton.

IN CHINA (Cinnamon and Buff).—First, Capt. Heaton. Second, nry Tomlinson.

IN CHINA (Except Cinnamon and Buff).—First, Mr. Cartwright. Miss V. W. Musgrove.

MA POOTRA.—First, Chris. Dain. Second, J. H. Craigie.

BURGH (Golden-pencilled).—First, Carter and Valiant. Second, Wm. w.

BURGH (Silver-pencilled).—First, Rev. T. L. Fellowes. Second, John

BURGH (Golden-spangled).—First, W. C. Worrall. Second, Jas. Munn.

BURGH (Silver-spangled).—First, John Robinson. Second, Lady Julia llis.

NDS.—First, Mr. J. Dixon. Second, Mr. G. C. Adkins.

(White and Piles, Duckwings and other varieties except Reds).—Mr. J. Hindson. Second, Mr. J. Fletcher. Third, Mr. W. Kershaw. Mr. W. Robson.

(Black-breasted Reds).—First, Mr. N. Grimshaw. Second, Mr. W. Third, Mr. R. Swift. Fourth, Hon. W. W. Vernon.

(Brown and other Reds, except Black-breasted).—First, Mr. G. W. Second, Mr. T. Burgess, jun. Third, Mr. J. Fletcher. Fourth, Mr. son.

AMS (Gold-laced).—First and Second, Mr. T. H. D. Bayley. Third, W. Hill.

AMS (Silver-laced).—First and Second, Mr. T. H. D. Bayley. Third, V. Hill.

AMS (White, clean-legged).—First, Mr. T. H. D. Bayley. Second, owe. Third, Mr. W. H. Denison.

AMS (Black, clean-legged).—First and Second, Mr. G. Bradwell. Mr. W. C. Worrall.

AMS (any other variety).—First and Third, Mr. G. Daft. Second, Mr. tterton.

BANTAMS (Black-breasted and other Reds),—First, Mr. Richard Second, Mr. J. Camm. Third, Mr. T. H. D. Bayley

BANTAMS (Any other Variety. First, Mr. J. Camm. Second and Mr. R. Hawkesley, jun.

BANTAM COCKS.—First, Mr. Turner. Second, Mr. R. Hawkesley, hird, Mr. Richard Swift.

s (White Aylesbury).—First and Second, Mis. Mary Seamons. Mr. J. H. Fowler.

s (Rouen).—First and Third Mr. George Daft. Second, Mr. R. son.

s (Black East Indian).—First, Mr. G. S. Sainsbury. Second, Mr. arle.

s (Any other Variety).—First, T. H. D. Bayley, Esq. Second, Mr. Dixon.

MENTAL WATER-FOWL.—First, Mr. T. H. D. Bayley. Second, Mr. orris.

(White).—First, Mr. R. Tate. Second, Mr. George Daft. Third, Kershaw. *Birds of* 1861.—First, Mr. R. Tate. Second, Mr. W. on.

(Grey and Mottled).—First, Mr. J. K. Fowler. Second, Mrs. Third, W. Lort, Esq. *Birds of* 1861.—First and Second, Mrs. Blair.

EYS.—First, Mrs. C. Browne. Second, Rev. T. L. Fellowes. Third, ir. *Birds hatched in* 1861.—First, Rev. T. L. Fellowes. Second, Smith. Third, Mr. E. Guy.

ANTS (Golden).—First, Charles Sturge Second, John. B. Payne.

ANTS (Silver).—Prize, G. Cartwright.

ANTS (Any variety).—First, Josh. Sturge. Second, John B. Payne.

PIGEONS.

ERS.—First, Mr. E. L. Corker. Second, Mr. McGregor Rake. Third W. Sidons & Sons.

D TUMBLERS.—First and Second, Mr. M. Rake. Mr. Eden.

—First, Mr. F. Esquilant. Second, Mr. J. W. Edge. Third, Mr. T.

BEARDS.—First, Mr. H. Yardley. Second, Mr. McGregor Rake. Third, Mr. S. Shaw.

JACOBINS.—First, Mr. J. T. Lawrence. Second, Mr. G. F. Nicholls. Third, Mr. F. Esquilant.

FANTAILS.—First, Mr. G. Goore. Second Mr. G. C. Adkins. Third, Mr. J. W. Edge.

TRUMPETERS.—First, Mr. S. Shaw. Second, Mr. W. H. G. Oates, Third, Mr. C. Felton.

POWTERS OR CROPPERS.—First, Mr. McGregor Rake. Second and Third, Mr. P. Eden.

MOTTLED TUMBLERS.—First, Mr. E. L. Corker. Second, Mr. Jas. Smith. Third, Mr. T. C. Esquilant.

OWLS.—First, Mr. McGregor Rake. Second, Mr. Jones Percivall. Third, Mr. Daniel Thwaites.

NUNS.—First, Mr. J. W. Edge. Second, Mr. Jones Percivall. Third, Mr. A. G. Brooke.

TURBITS.—First, Mr. E. A. Hargrove. Second, Mr. S. Shaw. Third, Mr. G. F. Nicholls.

ARCHANGELS.—First, Mr. J. W. Edge. Second, Mr. E. A. L. Silvester. Third, Mr. H. Yardley,

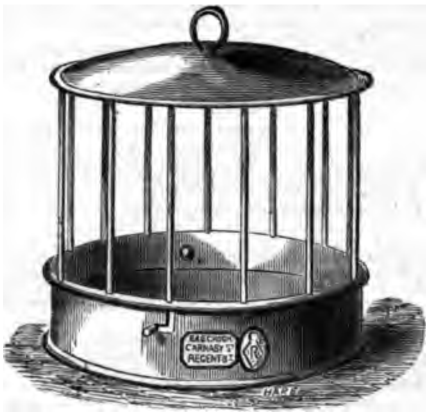
BARBS.—First, Mr. Peter Eden. Second, Mr. J. T. Lawrence. Third, Mr. Cam Baker.

RUNTS.—First, Mr. F. Key, Second and Third, Mr. Cam Baker.

DRAGOONS.—First, Mr. J. W. Edge. Second, Mr. E. A. Hargrove. Third, Mr. E. J. Samuels.

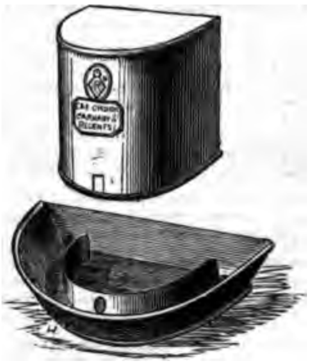
ANY OTHER VARIETY.—First, Mr. G. Machin. Second, Mr. S. Shaw. Third, Mr. John Percival.

CROOK'S POULTRY FOUNTAINS AND FEEDING-CAGES.



POULTRY FEEDING-CAGE.

THESE are the best contrivances for the purposes they are intended for.



THE POULTRY FOUNTAIN.

The fountains maintain a constant supply of clean water by preventing the birds either dirting it with their feet or dung, and the inside of the reservoir can be cleaned without any difficulty, which was a desideratum these fountains are the only ones to satisfy.

The feeding cages are equally effectual in preserving from dirt the food supplied to the fowls. Each bird can only insert his head and neck between the bars; and the tops can readily be taken off from the bottom when cleansing is needful. Both the fountains and feeding-cages are made of galvanised iron, so that they are never rusty, and are very durable. The feeding-cages are as useful for Rabbits as for poultry.

PLYMOUTH POULTRY SHOW.—The prizes are liberal, and which is still better, promptly paid. They vary from £3 to 10*s*. There are various sweepstakes for single cocks; a silver cup in addition for winner in the Game Cock competition; and another cup, in addition to the stakes, for the best pen of Hamburghs. There are also various prizes for Carrier Pigeons and Belgian Canaries.

NORTHERN COUNTIES POULTRY SHOW.

The ninth annual Exhibition of the Northern Counties Fat Stock and Poultry Society was opened Nov. 26th in the market place of Darlington. This Show has long occupied a prominent place among the agricultural events of the North; and we are happy to be able to state that in the present instance there is no falling off, but rather, on the contrary, unmistakeable evidences of improvement. In the aggregate number of entries there is this year a marked advance upon all previous exhibitions of the Society. Of the poultry, we believe it may be safely affirmed that such a collection as was brought together has seldom or never been witnessed in the North of England. Several of the most noted breeders of this kind of stock were among the exhibitors, and every class of domestic fowls was numerously and well-represented. As an instance of the size and weight of some of the specimens, we may mention that one pen, consisting of a drake and two Ducks, was found to weigh no less than 26½ lbs. The first-prize Geese (two) weighed 41½ lbs.; the first-prize Ducks 26¼ lbs; and the first-prize Dorking chickens, No. 38, 24¾ lbs. The Darlington ought to be the third centre Show of England. Crystal Palace for the south, Birmingham for the midland, and Darlington for the northern counties.

Spanish (Black).—First. Master Ridpath, Causeyside, Edinburgh. Second, R. Tate, Driffield, Yorkshire. *Chickens.*—First, E. Brown, Sheffield. Second, J. R. Rodbard, Aldwick Court, Wrington, Bristol. Third, — Crook, 12, Harrington Street, London. Highly Commended, S. Corner, Fulwell, Sunderland; Master J. Ridpath; R. Simpson, West Boldon; S. H. Hyde, Taunton Hall, Ashton-under-Lyne.

Dorking (Coloured).—First, Rev. J. F. Newton, Kirby, Stokesley. Second, H. W. B. Berwick, Helmsley, York. Highly Commended, Rev. J. F. Newton; H. W. B. Berwick; T. W. Hill, Heywood, Manchester.

Dorkings (White).—First, G. Hellewell, Wakeley, Sheffield. Second, F. Mewburn, jun., Larchfield, Darlington.

Dorking Chickens (any variety).—First, W. Dolby, jun., Syston Old Hall, Grantham. Second, J. Bell, Thornton-le-Moor, Northallerton. Third, Miss Milne, Otterburn, Kelso, N.B. Highly Commended, W. Braithwaite, Freeholders' Home, Darlington; H. W. B. Berwick, Helmsley; T. W. Hill, Heywood, Manchester

Cochin-China (Cinnamon and Buff).—First, T. Stretch, Marsh Lane, Bootle, Liverpool. Second, H. W. B. Berwick, Helmsley.

Cochin-China (any other variety).—First, J. Shorthose, Newcastle-upon-Tyne. Second, J. Bell, Thirsk. Highly Commended, T. B. Stead, Leeds. *Chickens.*—First and Second, E. Smith, Middleton, Manchester. Third, R. D'Ewes. Highly Commended, T Stretch, Liverpool; H. W. B. Berwick, Helmsley; R. D'Ewes, Knaresborough; Miss A. Watkin; J. Shorthose, Newcastle-upon-Tyne.

Game (Black-breasted).—First, H. Adams, Beverley, Yorkshire. Second, H. Adams, Beverley, Yorkshire. Highly Commended, T. Dodds, Ovenden, Halifax, Yorkshire. *Chickens.*—First, E. Aykroyd, Darlington. Second, H Adams, Beverley. Highly Commended, A. Perkins, Belle Vue Cottage, Darlington; T. Dodds, Ovenden, Halifax, Yorkshire; W. J. Cope, Barnsley; G. Hellewell, Walkley, Sheffield.

Game (Duckwings, Greys, and Blues).—First and Second, H. Adams, Beverley. *Chickens.*—First, J. Crossland, jun., Wakefield. Second, H. Adams, Beverley.

Game (any other variety).—First, G. C. Whitwell, Kendal. Second, J. Crossland, jun., Wakefield. *Chickens.*—First, J. Fletcher, Stoneclough, Manchester. Second, G. S. Thompson, Fairfield, York.

Hamburgh (Gold and Silver-pencilled).—First, J. Dixon, North Park, Bradford. Second, W. Froggatt, Walkley, Sheffield. Highly Commended, R. R. Tulip, Monkwearmouth; S. Smith, Northowram, Halifax; A. Nicholson, Wakley, Sheffield.

Hamburgh (Gold and Silver-spangled).—First, H. Beldon, Park Cottage, Bradford. Second, J. Dixon. Highly Commended, T. H. Turner, Fir View, Sheffield. Commended, J. Dixon, Bradford.

Hamburgh (Golden-pencilled).—*Chickens.*—First, H. Beldon, Park Cottage, Bradford. Second, F. Hardy, Quarry Gap Hotel, Laister Dyke, Bradford. Commended, J. Dixon; W. Froggatt, Walkley, Sheffield; S. Smith, Northowram, Halifax.

Hamburgh (Silver-pencilled).—*Chickens.*—First, H. Beldon, Park Cottage, Bradford. Second, J. Dixon, North Park, Bradford. Commended, G. Hellewell, Sheffield.

Hamburgh (Golden-spangled).—*Chickens.*—First, W. Froggatt, Walkley, Sheffield. Second, J. Newton, Silsdon, Leeds.

Hamburgh (Silver-spangled).—*Chickens.*—First, H Beldon, Park Cottage, Bradford. Second, J. Dixon, North Park, Bradford.

Polands (Black with White Crests).—Prize, J. Dixon, North Park, Bradford.

Poland (any variety).—First, H. Beldon, Park Cottage, Bradford. Second, J. Dixon, North Park, Bradford. Commended, J. Dixon. *Chickens.*—First, H. Beldon, Park Cottage, Bradford. Second, J. Dixon.

Any other distinct breed.—First, R. Tate, Driffield. Second, A. Cattley, York. Third, T. Chambers, Walkley, Sheffield.

Bantams (Gold and Silver-laced).—First, J. Dixon, North Park, Bradford. Second, T. H. D. Bayley, Ickwell House, Biggleswade, Beds. Highly Commended, E. Hutton, Pudsey, Leeds.

Bantams (White).—First, R. Tate, Driffield. Second, T. H. D. Bayley.

Bantams (Black).—First and Second, E. Hutton, Pudsey, Leeds.

Game Bantams.—First, T. H. D. Bayley. Second, G. Bentley, Kirkstall, Leeds. Third, J. Crosland, jun, Wakefield. Commended, Mrs. [illegible] Holywell; J. Grocott, Nantwich.

Ducks (Aylesbury).—First, Mrs M. Seamons, Hartwell, [illegible] Second, R. Tate, Driffield. Highly Commended, G. Pease, Southend Darlington; S. Burn, Whitby.

Ducks (Rouen).—First. R. Tate, Driffield. Second, T. H. Barke [illegible] ovington, Yorkshire. Highly Commended, [illegible] etherell, Albrough [illegible] rlington; T. H. Barker; J. Dix[illegible] [illegible]

Ducks (any other variety).—First, J. Dixon, Bradford. Second, E. Hutton, Pudsey, Leeds. Highly Commended, G. Pease, Southend, Darlington; S. Burn, Whitby. *Ducklings.*—First, Mrs. M. Seamons, Hartwell, Aylesbury. Second, T. W. Hill, Heywood, Manchester. Third, T. Kipling, Manfield, Darlington. Highly Commended, Mrs. M. Seamons; J. Dixon; T. H. D. Bayley, ; J Holme, Knowsley, Prescot; R. Tate.

Geese.—First, R. Tate. Second, G. Pease, Southend. Highly Commended, Mrs. Milner, Thirsk. *Goslings.*—First, Mrs. M. Seamons, Hartwell, Aylesbury. Second, Mrs. P. Sturdy, Guisbrough. Highly Commended, Mrs. Milner, Thirsk; J. Carr, Jedburgh, N.B.; R. Tate, Driffield.

Turkeys.—First, G. Pease, Southend. Second, E. Guy, Eaton, Grantham. *Poults.*—First, R. Tate, Driffield. Second, Rev. T. L. Fellowes, Acle, Norfolk. Highly Commended, Mrs. A. Johnson, Viewly Hill, Long Newton; G. Pease

Guinea Fowl.—Prize, R. Tate, Driffield. Highly Commended, F. Mewburn, jun., Larchfield, Darlington.

Dorking Pullets (any variety).—First and Second, H. W. B. Berwick, Helmsley. (No. 318, exhibited by William Gray, Darlington, being immediately disqualified as "very old hens, and a palpable falsehood, which ought to be exposed).

Game Pullets (any variety).—First, J. Crosland, jun., Wakefield. Second, E. Aykroyd, Darlington. Commended, T. Dodds, Ovenden, Halifax.

Single Dorking Cock (any variety).—First, E. Smith, Middleton, Manchester. Second, H. W. B. Berwick, Helmsley.

Single Game Cock (any variety).—First and Second, H. Adams, Beverley. Third, J. Fletcher, Stoneclough, Manchester. Commended J. Firth, Halifax; J. R. Rodbard, Wrington, Bristol; E. Hutton, Pudsey, Leeds; G. Hellewell, Sheffield.

Sweepstakes.—*Game Cockerel.*—First, J. Firth, Halifax. Second, E. Grimshaw, Pendle Forest, Burnley. Third. A. Hodgson. Illingworth, Halifax. Commended, R. Tate, Driffield. *Game Bantam Cock.*—First, J. Crosland, jun. Second, R. Wood, Stockton-on-Tees. Third, T. Howarth, Coleman's, Norwich, Bolton-le-Moor, Lancashire.

PIGEONS.

Carrier Cock.—First, J. W. Wooler, Holywell, Heighington. Second, J. Shorthose, Newcastle-on-Tyne. Commended, W. Cannan, Bradford; A. L. Silvester.

Carrier Hen.—First. W. Cannan, Bradford. Second, J. Shorthose, Newcastle-on-Tyne. Commended, F. Mewburn, jun., Larchfield, Darlington.

Powter Cock.—First, F. Mewburn, jun., Larchfield, Darlington. Second, W. Cannan, Bradford.

Powter Hen.—First, F. Mewburn, jun., Larchfield, Darlington. Second, W. Cannan, Bradford.

Almond Tumblers.—First, W. Cannan, Bradford. Second, A. L. Sylvester, Birmingham.

Tumblers.—First, W. Cannan, Bradford. Second, J. Percival, Birmingham.

Fantails.—First, E. Brown, Sheffield. Second, T. Ellrington, Woodmansey, Beverley. Commended, W. Vaughan, Cleveland Lodge.

Trumpeters.—First and Second, F. Mewburn, jun., Larchfield, Darlington. Commended, J. Wilson, Darlington; F. Mewburn.

Barbs.—First, W. Cannan, Bradford. Second, J. Entwistle, Chapel Allerton, Leeds.

Jacobins.—First, W. Cannan, Bradford. Second, E. Smith, Birmingham. Commended, W. Vaughan, Cleveland Lodge; T. Ellrington, Woodmansey, Beverley.

Turbits.—First, J. Vaux, Durham. Second, J. Entwistle, Chapel Allerton, Leeds.

Owls.—First, W. Cannan, Bradford. Second, J. Entwistle, Chapel Allerton.

Any other new or distinct variety.—First and Second, F. Mewburn, jun, Larchfield. Third, Mrs. J. W. Wooler, Holywell, Heighington. Fourth, E. A. Hargrove.

Judges for Poultry and Pigeons, Messrs. Smith and Bird.

MR. TATE AGAIN.

Seeing in your Journal of the past week a statement of Mr. Tate's behaviour towards the Secretary of the Plymouth Poultry Show, I am induced to acquaint you of a transaction with myself and the above-named person. In your Number of the 17th of September last, an advertisement of Mr. Tate's appeared, and amongst other birds enumerated was a pen of "Brahma chickens," 21*s.*, have taken "five first prizes" this season. I wrote him to know if he still held the birds I would have them, and on hearing would forward a post-office order for the 21*s.* Getting his reply in the affirmative, I sent the order, and had in return two pullets and a one-year-old cock, also receiving a letter by post stating the cockerel had died. Such might have been the case, but I think Mr. Tate should have given me this information before he sent off the birds, as I should certainly have countermanded, "the chickens" being expressly what I wanted. I have exhibited the birds, and the Judges never passed the slightest commendation on them. On receiving the birds I really doubted the truth of the advertisement, and subsequent matters tend to confirm the same.—F. Baily, *H. S. Calne Poultry Show.*

INQUIRE THE PRICE BEFORE YOU SEND R POULTRY TO LEADENHALL MARKET.

ECENTLY sent two hampers of fowls to a salesman in [illegible]enhall Market. Many of them were this year's birds, and weighing 9 lbs. a-couple. I inclose his list of prices which he had the courage to send me. In your next impression please give your opinion.—T. V.

Leadenhall Market, 18th November, 1861.

	£	s.	d.
Nov. 7th—4 Chicks	£0	4	0
12 Hens	0	14	0
Nov. 14th—12 Fowls	1	0	0
	1	18	0
Comm. 1s., paid, 3d.	0	2	3
	1	15	9

[Without knowing what condition they were in we cannot give an opinion upon the prices; but if the hens were old 1*s.* each would be as much as they were worth. At this season fowls are at about their lowest price in London. You obtained 3*s.* 4*d.* per couple for yours, and they are retailed just now at 4*s.* 6*d.* per couple. We have inserted your communication as a warning to our readers, not because we are able to say that you have a good ground for complaint.—Eds.]

APIARIAN NOTES.—No. XIII.

During the last few months, so much has been written on apiarian matters in the Journal of Horticulture, by well-qualified correspondents, that I have rather refrained from using my own pen until there should appear a falling-off in contributions to this very interesting portion of its pages. And here let me say how I wish that the old title of The Cottage Gardener had been retained unchanged. It appears to me much less easy to sit down and indite a gossiping article on bees for the page of a periodical, with the somewhat formidable title of Journal of Horticulture, than it used to be for the weekly serial with the less pretentious name of Cottage Gardener. But at the same time, I must in common with all its readers, bear testimony to the great improvement which it has undergone since the change; and in unison with the readers interested chiefly in the "Poultry, Bee, and Household Chronicle" department, I must express my gratification that the writers on apiarian subjects are so well encouraged to take up their pens and give to its readers the results of their experience; and also that inquirers are so freely permitted to seek information either from the Editors, or the numerous correspondents.

Does the Super become the Stock-hive?—I have been a good deal surprised at the exception which has been taken to the reply to "A. W.," in a late Number, by certain correspondents, who maintain that the super will invariably become the stock-hive. Such at any rate is not in accordance with my experience. I have too much respect for the opinions of practical men, such as "A Renfrewshire Bee-keeper," and your Ayrshire correspondent, to state this as my opinion in such direct opposition to their's without having duly considered the subject. Every apiarian should know that bees will not always follow a certain line of conduct. A hive may be worked one season on a particular plan with perfect success; the following under precisely similar arrangements, so far as the owner is concerned, a complete failure may be the result. Take one instance—the year before last my adjuster-hive stored in its super fifty-three pounds of beautiful honey, with not six cells of pollen and no brood whatever. The summer previously, thirty pounds were taken from the same hive, and bees in the same way and in the same condition. This summer, on the contrary, the bees after partially filling the super with combs converted it for a time into a breeding compartment, constructed a great number of royal cells therein, and threw off two very fine swarms. Honey was as plentiful at that time as in either of the previous seasons, and I should much like to know why the results varied so vastly. I will not, therefore, commence by stating that the super never becomes the stock-hive; it may occasionally be so converted, but I fearlessly assert that such conversion is contrary to the general law. If such were the case, I do not think we could ever expect to take off our well-filled, broodless, supers of honeycomb, for they would in all cases be transformed into mere breeding compartments.

To avoid misconception, I will state what I consider to be the question at issue between us. We have two stocks equally well furnished with combs; No. 1, queenless, is placed on No. 2 having a queen. Which will become the stock-hive? The queen may, and most probably will, ascend and lay a great number of eggs in the combs of No. 1. As these are hatched out the cells will be filled with honey; and I think in at least nine cases out of ten, if the two hives are separated in the autumn, that the queen will be found in the lower hive. It is but a question of time. It is a well-known law in the economy of a hive, that the honey is stored in that part of it furthermost from the entrance, and it matters not whether the hives used be placed one above another or collaterally. I have seen a unicomb-hive on Dr. Bevan's plan, having the entrance at one end instead of in the centre as he gives it, where the honey was stored in a triangular shape chiefly in the upper part of the furthest end, the breeding part, with the mass of the population being confined to the lower part nearest the entrance. The very first year after I commenced bee-keeping (about fifteen or sixteen years ago,) early in June I purchased of a cottager a strong cottage-hive, which must within a few days, if left undisturbed, have cast a swarm. This was removed the same evening a distance of two miles to my town garden. Having a straw hive filled with empty combs, by using the two boards described by Taylor in the manual (sixth edition, page 80); it was placed so that the bees had to pass in and out through the spare hive. In a very few weeks I took away the inner or what had been the stock-hive, with thirty-five pounds of honey and not a cell of brood. The second hive, equally heavy, was crammed with brood down to the very bottom of the combs.

Some may say that this does not bear upon the point, that it is only a case of collateral working and not of storifying. But, although considering it does apply to the matter under discussion, I can give an instance of a storifying-hive, one out of many that have come under my notice, which I bring forward chiefly because it is one of which the actual circumstances of the case are better remembered by me than most others.

The year 1860 was the worst for bees I have ever known, and few hives worked at all in supers, with the exception of constructing a few empty combs. On one of my stocks, a flat-topped straw hive, a good-sized octagon-super was filled with combs and sealed honey, weighing about 25 lbs., and in every way adapted for a stock-box. This was taken off in September, but on inspecting the lower, or stock-box, in which were the bees, no honey was to be found, so the super was returned to the hive. One reason which actuated me being, that I wished the Stewarton-octagon to become the stock-hive. In the spring, having a weak stock which it was desirable to strengthen with a little brood, I inspected both the super and the lower stock-hive. In the former was found a considerable quantity of brood, but the queen was in the lower hive, and then breeding there; all the bees quickly leaving the super for the stock-hive. The super was then placed as it was, under the hive which required strengthening; but in a day or two, seeing that the bees were not numerous enough to cover all the brood, and fearing that if left so it would be sacrificed, it was again placed on its original stock. On a further inspection about three weeks afterwards, the brood was found to be all hatched out and very few bees in it. I, therefore, removed it altogether, and soon after placed an empty Stewarton-super on the same stock, which in due time was taken off with 25 lbs. weight of honey. In the foregoing instance I should not have been surprised if the super had become the stock-hive, as the combs were new and well formed with stored honey; whereas those in the stock were some years old, and so far as I could discover without any honey. The bees took down gradually what honey was required for their consumption, as there was not a great deal left when finally removed. I must again state, that the answer given to the query of "A. W.," would, in my opinion, be found to be correct in the majority of instances. In cases where the super should be made the stock-box, I should conclude that the bees were led thereto by certain influences, such as considerable superiority of combs, &c. As I did not intend to have extended my observations on this topic to so great a length, I will defer to a future chapter of "Apiarian Notes," the consideration of other matters which have attracted my notice, and my experience as a bee-keeper during the past season.—S. Bevan Fox, *Exeter.*

BEES AND THE ART OF QUEEN-MAKING.

In the August number of "Good Words"* appears an article under the above title from the pen of the Rev. William Leitch, D.D., Minister of Manimail, Fifeshire, and last year appointed Principal of Queen's College, Canada, in which a new theory is propounded with regard to the cause which operates in the production of what are called "artificial queens," during which process the marvellous effect is produced of converting a worker egg or young grub into a perfectly developed queen.

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* *Good Words, a Magazine for all the Week.* Edinburgh: Strahan. London: Groombridge.

Before entering upon the question as to whether Dr. Leitch has hit upon the true cause of this phenomenon, we may first advert to two or three instances in which he is so decidedly at fault, as to raise some doubts in our mind as to whether he has brought his whole power of observation to bear on the subject, or whether the paper may not be regarded as an exposition of views somewhat hastily entertained, and which it is not unlikely may be either greatly modified or entirely discarded after more mature investigation.

Speaking of the manner in which a queen bee first inserts her head before depositing an egg in a cell, our author says, "she never omits the depositing of an egg if she has previously inserted her head." This assertion is so contrary to the fact that, when a hive gets pretty full of brood, honey, and pollen, it is by no means unusual to see a queen insert her head in a dozen cells, or even more, before she finds one in which to lay an egg.

There is, also, an extraordinary mistake with regard to the average duration of life in the workers, which is stated to be "only six weeks." It has been pretty well ascertained that the life of a worker bee does not much exceed six or seven months, from which, of course, something must be deducted on account of accidents, if we are to arrive at an average; but to place it so low as six weeks is altogether preposterous. This error leads, also, to another, which is, that whilst a queen bee lays eggs "at the rate of an egg per minute," she does "nothing more than keep up the balance between life and death." Most apiarian observers are aware that whenever a queen bee lays eggs at the rate of nearly 1500 a-day the population rapidly increases, which increase (if not put a stop to by swarming), continues until it is checked by the mortality of autumn, and the diminution and ultimate cessation of breeding which then takes place.

Again, after stating with perfect correctness that the queen bee "does not put on the airs of a monarch, for her duties are simply maternal," Dr. Leitch contradicts himself by speaking of the workers as "the servile class" and remarks on the marvellous power which changes "a slave into a queen."

Our author then asks, "What is there in this new cradle (a royal cell) to account for the transformation? It cannot be the size, for the queen, at the time she comes forth from her cell, is hardly larger than a worker bee, and the cell must be accurately fitted to her body." Now this is all wrong, and calculated only to mislead; the queen when she first issues from her cradle is really very much larger than any worker when it first appears; and the cell, so far from being accurately fitted to her body, is so large that if it be shaken near the ear, prior to the young queen's exclusion, she may be both felt and heard to strike against the sides of her prison.

We now come to the Rev. Principal's theory with regard to the production of artificial queens, which we give in his own words. After noticing the power which bees possess of increasing the temperature of any part of their hive by an accelerated respiration, Dr. Leitch says:—"Viewing this power in connection with the insulation of the queen's cell, we have a clue to the mystery of development. We soon see why the bees should be at so much pains to drag the royal larva out from the midst of its companions and place it in an insulated position, where a special temperature may be applied. Were the royal larva allowed to remain in its original position, a higher temperature could be applied only to the end of the cell, and the end of the cell is so small that it would be difficult to apply a differential temperature to it. To meet this difficulty the queen is made to slide out of her old position into a new one, where she can be completely surrounded by the hatching bees, and have an elevated temperature applied to all parts; and, when you look into a hive, you see the bees constantly clustering all over the insulated cell. The warmth is applied, not as in a footpath to the extremities, but to the whole body, which is immersed in a medium of an elevated temperature. The surmise that temperature furnished the clue to the secret was confirmed by actually testing it; small thermometers were inserted into the hive, one in contact with the queen's cell, and others in different parts of the comb, we found that the difference of temperature bore out the hypothesis, that a higher temperature was steadily applied to the queen's cell. The inference is then legitimate that temperature, if not the [illegible] which account [illegible] causes combining to produce the result; but that special temperature is one essential element our experiments conclusively established."

As the Rev. Principal does not particularise any experiments beyond thermometrical observations, we may be excused for doubting whether these are quite so conclusive as he imagines, as well as for suggesting that it is just possible that he may have mistaken effect for cause, since it by no means follows that because the process of queen-raising is generally attended with an increase of temperature, the insulation of a queen's cell or even a special temperature is absolutely essential to its success. In frame-hives especially we have often found queens hatched out of cells which were so placed as to render it impossible for the bees to cluster all over them, whilst the general position of queens' cells on the edges of the combs, and, therefore, in the coldest parts of the hive, is such as of itself to raise a doubt as to the correctness of the new theory.—A DEVONSHIRE BEE-KEEPER.

BOTTLE-FEEDING FOR BEES.

SEEING the other day Messrs. George Neighbour & Son's new bottle-feeders, at their Glasgow agents, reminded me of an old score I had to settle up with that "Main Pillar" of your valued bee-corner, "A DEVONSHIRE BEE-KEEPER," in justice to whom, as well as this plan, it was my intention to have alluded long ago.

As there are few apiarians so happily situated, but must have recourse to feeding at some time, or lose their stocks; and as nearly every one has some particular scheme of his own, from the ready soup-plate of the cottager, with its floating straws, up to the polished rosewood or mahogany octagon, with its glass top, and numerous etceteras of his more aristocratic brother; so that bee-feeders are about as plentiful as bee-keepers.

With the opening Number of your new series, I commenced a somewhat lengthy account of the "Bee-hives and their Appurtenances" of my own apiary, and naturally enough as feeders came round, described in No. 6 the modes I employed, mentioning the subsidiary place "The Bottle" then held, being only used to supply a weak, or stimulate a stubborn stock.

This plan, although known and practised more or less in these northern regions, was new in the south, till your Devonshire correspondent, meeting with it in M. Hermann's work, tried and recommended it to your many apiarian readers; and, consequently, being quite "new fangled" with the system, was ready to take up the cudgels on its behalf, and in the following Number came down upon me for styling it "a slow process," besides asseverating as strenuously as any thirsty Hibernian, that out of the bottle came "never a drop," informing us at the same time that he had supplied his favourites the previous autumn with a couple of hundredweight of food through its instrumentality.

This high recommendation from so trustworthy an authority caused me, my stocks at the time being at a low ebb, to test it on a larger scale; and when I tried it with populous stocks, found it was not such a slow process as my previous experience with weak ones led me to believe; still it is slower than any of the modes previously described—indeed slowness is its only defect, otherwise for cleanliness, saving of excitement, or disturbance to the hive, I can most cordially throw in my testimony with that of your esteemed correspondent that it is decidedly in advance of any other I have yet tried.

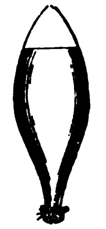
I had ocular demonstration of the dropping. Many a time have I, after withdrawing the cork from a famishing family in a straw hive, watched the food get on their coats and combs, and with their extended little proboscis lick it up. I also recollect once getting an accumulation of food that had dropped on the board of a defunct colony which perished during a long frost; still upon using a finer net, doubled, I found beyond a single drop or two, on first reversing the bottle, your correspondent was perfectly right as to what he said of the exemption from leakage.

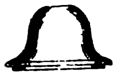
To aid in accelerating the emptying of the bottle, I have tried various plans, some of which for the benefit of your readers interested in bottle-feeding, I will now describe.

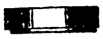
There is nothing intrinsically slow in the system, the deficiency being in the small surface of net exposed to the bees, and the limited number that can get room to draw out and remove the food from the little space—say three-eighths between the [illegible] inch-and-a-quarter hole

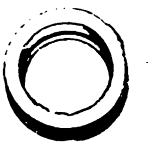
the two central bars, so that the entire mouth of the
ould be introduced, I found it was emptied in half the
still the bees between the two particular combs, above
he bottle was placed, were only employed, their neigh-
f the adjoining ones, from inability to reach and assist in
iating the food, being at the same time in a state of inac-
that several might be employed at one and the same
a bar-and-slide hive.

bviate this in all the straw hives I have had made this
the work was begun on a circular six-inch ring of red
g. 4), in the outer edge of which a grove is run for the
ady retention of the first straw band out of it, it is very
to start; but it may be further secured by a small nail or two before the second is added. Round the inner edge of central four-inch ring is left a projecting quarter-inch check at bottom to receive the bung (*fig.* 3), upon which it rests; and, consequently, fits flush above and below. Through it a circular 1¼ inch aperture is drilled, so that a small quantity of food might be administered. It is stopped like those in my frame-hives by an inch-and-a-quarter piece of half-inch wood set in a little bit of cotton cloth for its more ready extraction. The main use of this bung (*fig.* 3), is to prevent the bees filling the ring space with comb during the working season, when the hive is to be fed. Autumn and spring it must be withdrawn altogether, and the block (*fig.* 2), with an inch-and-a-quarter aperture, and the check to fix and steady it set on it is partially hollowed inside, which with the ring space allows a larger number of bees to congregate, and ready access to ascend and descend in three spaces between the combs. Although not seen in sketch, short pieces of bars with comb attached, or bits of Woodbury-bars, are fixed under the ring from back to front to regulate the comb-building.









l is the clear conical soda-water bottle I feed with, on
he straw-hackle sits quite jauntily.

lat-topped hives I have the block turned out of the solid
ce, with a five-inch square three-
of an inch thick, like a stand,
view of which is seen in sketch
. This enables it to be fitted
ttle half-inch frame fixed on the
pt secure with a couple of small
ars; so secured it is seen in
No. 6.

FIG. 5.

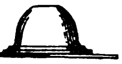
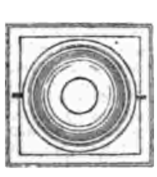


FIG. 6



y, the inventive genius of the
Holborn concern was asleep
lessrs. Neighbour having their
, could not, in these days of
glass and art-design, hit upon
ng better than a mere stumpy
the principle being equally applicable to another shape.
e we take as a more graceful one—for instance, the Bell,
the good old adage says, "That every tub should stand
ts own bottom," why not every bee-feeder? This form
it (*fig.* 7), supersede the necessity for the supporting block, and as effectively exclude wasps and robbers. Round the central one-and-a-quarter-inch hole I would have a projecting half-inch rim, and in the upper part of it a slight indenture or groove, in which the tying thread would rest. Then, charged and netted it was ready for insertion into the one-and-a-quarter-inch aperture. There might also be four little holes in the stout rim for passing a cord through,
re when on, to the board in dome-shaped hives. As
es are now so much in vogue, why not for them vary a little?

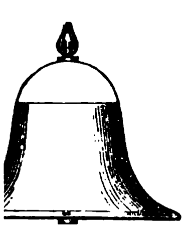
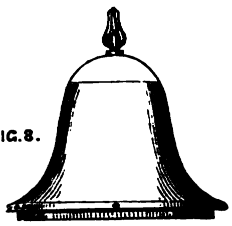


Fig. 8, by having a long three-eighths slip, same projecting half-inch rim and grove, it could be slipped in between the bars; and, if we bee-keepers could agree upon a uniform breadth of bars, and width between, then there might be two or three of them to feed between them as many combs at one and the same time.

FIG. 8.



In designing a new bottle-feeder, the block might be made to serve a much more important object than that of a support. By increasing the feeding-mouth of No. 7 to nearly the width of the bottom of the bell, resting it in a quarter-inch check on its top, in which the perforated zinc would be previously placed, or by increasing the thickness of the straight edge of outer rim, it could be altogether open, the net tied in a groove in said edge. By either of these modes a considerable body of bees would gain access from the space between the bars to the under side of zinc, and draw out the food from the large surface of net quicker than by any other plan; and, supposing the block be also of glass, a nice "bead" on its outer edge, from its thickness—say, 1½ inch or 2 inches, it would both lie solid, and the feeding be seen, besides forming a handsome appendage to the bell.

An old bee-keeper to whom I recommended the system of feeding, thought he saw he could improve on my design, by having the upper portion to come off as a lid, forgetting all the while atmospheric pressure, and did not discover his mistake till charging it for the first time, saw the food run in a stream from the entrance of his hive. By using linen instead of net he tells me he now uses it.

I find the bees, generally, should the bottle be left on any time, after it is emptied, for the sake of the saccharine matter with which the net is saturated, eat it through. The zinc prevents this, although it protracts the removal of the food: still, I find the bottle (No. 1) can be emptied by a fair stock twice in twenty-four hours, equal to 2 lbs. weight of food converted out of 21 ozs. sugar.

From the above voluminous hints I hope to see produced a really superior feeder on the bottle principle; and should the parties get "honourable mention" at the coming Exhibition of 1862, expect as compensation for the piracy, they will send half-a-dozen north as a pattern to—A Renfrewshire Bee-keeper.

[We believe that Messrs. Neighbours' simple feeding-bottle and block can readily be made to fulfil every purpose that would be answered by the apparatus which has been so ably sketched by our correspondent, and are far from blaming them for confining their attention to a bee-feeder, which should be at once effectual and inexpensive. All intricate forms being difficult to manufacture, would be costly in production, difficult to keep clean, and troublesome in use.

"A Renfrewshire Bee-keeper" we think is still somewhat at fault with regard to the assumed "slowness" of bottle-feeding. We have, this season, administered to our bees above 6 cwt. of liquid food entirely by means of the bottle, and we can confidently state that it is anything but a "slow" process. A strong stock will readily appropriate 5 lbs. per diem from one of Messrs. Neighbours' feeding-bottles, and through perforated zinc. We believe this to be quite as rapid a rate as is consistent with economy and the well-doing of bees. These results are in part attributable to our feeding through a two-inch aperture, in what our correspondent did not approve of. His slow rate of progress is doubtless owing to what we consider an inconvenient arrangement of slides.

By simply inserting a piece of half-inch wood with a four-inch circular aperture between the top of a bar-and-slide hive, and the block of the feeding-bottle, three slides may be partially withdrawn, and the appropriation of the contents of the bottle will be proportionately accelerated with dome-shaped straw hives. All that is necessary is a two-inch central aperture and the exercise of some little ingenuity in affording a steady support to the feeding-bottle and block.

The meshes of the net we use for feeding are about one-sixteenth of an inch in diameter; and, if "A Renfrewshire Bee-keeper" will fill his soda-water bottle with pure water, tie it down with only a single thickness of net of this description, and then invert it, he will at once, we think, discard the notion of bee-food dropping from the bottle after the first rush consequent on turning it over has subsided. This may be allowed to fall into the hive, or into a jug held to receive it; and, in either case, will produce no ill consequences.]

THE CANARY AND THE BRITISH FINCHES

(*Continued from page* 158.)

THE BREEDING-CAGE.

The cage in which Canaries or their mules are bred should be much larger than those for single birds. Common breeding-cages made of thin deal, the top, back, and ends being boarded, and the fronts only of wire, are sold very cheap at the London cage makers; a tolerable one costing about 3*s.* 6*d.* These cages are fitted up with the general conveniences; but are, I think, too small for any but the smaller varieties of birds.

A good size I consider to be about 3 feet long by 2 feet high, and 18 inches deep from back to front, close-boarded at the top, bottom, back, and ends. The whole of the floor should have a slide or false bottom to draw out in order to clean the cage, and contain sand, so necessary to absorb the moisture from the dung, and keep the cage clean and dry: as also for the birds to pick out the smaller particles of grit which they eat to assist digestion by grinding the hard food in their gizzard.

The roof of the cage I prefer highest in the middle, and slanting to both sides, which will throw off the rain if left out in a hasty shower; and it is always beneficial to hang the birds in the open air when the weather permits. The middle of the roof being the highest, allows the bird to stand erect on the upper perch, which perch at the same time is rather higher than the nest-boxes; and this is of much importance, as the birds naturally select the highest part for roosting. It will often prevent their sleeping on the edges of the nest, which habit causes the accumulation of dirt, and often of insect vermin, when it should be kept scrupulously clean. It is best to provide two nest-boxes for each pair of birds, and these may be square boxes placed on a shelf, as seen in the accompanying sketch; or they may be suspended at the back of the cage, in which latter position it is advisable to make the boxes rather deeper than ordinary; and a roof or cover like the roof of a Swiss cottage makes them more secluded. The seed-drawer is placed under the breeding-shelf, or, still better, to keep the seed free from dirt in a trough outside at the end of the cage, so arranged that the bird can easily reach it, but not walk over the trough so as to dirt in it. A partition to divide off a part of the breeding-cage is very useful on many occasions—for instance, it often happens, especially in mule breeding, the cock becomes mischievous and will eat the eggs, or peck the young ones, in which case he may be put into the partition; and it is better that he should be opposite to the nest that he may see the hen, than under it, as is frequently the case. This partition may be made to draw out, so that when not in use the birds may enjoy the whole of the cage; it is also used to place the young birds in when they have left the nest, the old ones still feeding them through the bars; for, as the hen sometimes lays again before they can thoroughly feed themselves, they are apt to crowd into the nest and spoil the new eggs, or the hen will often pull out their feathers to line her nest with, which much disfigures them. Tin pans are placed in both compartments of the breeding-cage, in which the bread, egg, and mawseed are put for the old birds to feed their young ones on, as also for the young ones to begin to feed themselves on before they learn to crack the hard shells of the common canary seed. Water is given in the common glasses or "bird-boxes," and the birds put their heads through a hole to reach it. A better form of glass or "fountain" is the high sugar-loaf kind of bottle, with a foot or lip which enters the cage, and from a small opening in which the birds can drink. The door being in front the bath is easily suspended over the open doorway; and frequent bathing is much enjoyed by the birds, and conduces much to their health.

Green food may be strewed on the bottom of the cage, and this should be fresh; a bunch of seedy groundsel, &c., may be put in a gallipot, with a little water to keep it fresh, and stand on the floor of the cage; a lump of mortar containing a small quantity of salt should be placed in one corner of the cage for the birds to peck; or, some use a bone of the cuttlefish instead. The materials for nest-building are usually placed in a small [illegible] and suspended in the cage; or, better perhaps a small rack [illegible] the cage, so that the birds can draw the pieces through [illegible] complete the f[illegible] [illegible] breeding-cage. B. [illegible]

OUR LETTER BOX.

Dorkings in Confined Space (*A Farmer's Wife*).—Your room 12 feet by 6 feet, will do very well for roosting and laying in, but they *must* have a run. Can you not enclose a space with galvanised wire for them communicating with the room? The larger the space the better. Or cannot you have all the other fowls confined for half the day, and during that time let the Dorkings have the full benefit of the farmyard? Let the seven hens be with the cock from Lady Vernon's strain, and put the other cock with Dorking hens from some other yard. Feed on a stiff mash of ground oats or ground barley, twice daily, and let them have plenty of green food. Have at least 2 inches of sand and limy rubbish on the floor. Buy our "Poultry Book for the Many," you can have it free by post for seven penny stamps. You will find plenty of needful information in it. Write again if you need our advice.

Feathers of Black Game Cock (*F. B. C.*).—A black Game cock should have no maroon nor any other mixture of colour in his feathers. He would be disqualified by it.

Value of Feathers (*A Poultry-keeper*).—We cannot tell you the exact value of the poultry feathers, as they vary in value. Good fowls' feathers average about 4*d.*; Ducks' and Geese' about 1*s.* per lb. The feathers of very young birds are worth less. Cock's tail feathers are very valuable if they are quite black and very glossy. We need hardly tell you the Duck's feathers must be kept quite separate from any others.

Cochin-China Pullets' Legs (*Idem*).—Clean-legged Cochin pullets are worthless for everything except to lay eggs. They must be rejected as untrue.

Canary and Bullfinch Mule (*A Worcester Amateur*).—Mr. Bechstein has put the possibility beyond doubt by stating the fact of a cock Bullfinch having bred with a hen Canary; but I believe it is very difficult to get them to pair, consequently such Mules are very rare. If you intend to try a cock Canary with a hen Bullfinch, you should have other Canaries to take the eggs, as it is still more difficult to induce the wild species to sit in confinement.—B. P. Brent.

Malt Dust.—*B. E. W.* resides at Kennington, and wishes to know the place nearest his residence where he can obtain malt dust or combs.

Rabbits for Market (*G. J. N.*).—None are superior to a large breed of the common Grey.

Goat Management (*A. L.*).—In No. 5, of our new series, at pp. 90 and 92, you will find all that we know upon the subject. We shall be obliged by any of our readers stating the results of their experience in Goat-keeping, feeding, &c.

An Oversight (*A North Lancashire Bee-keeper*).—The communication to which you refer reached us nearly a month before it appeared, and the corrections subsequently requested by its author, which included the omission of the passage to which you object, were forgotten by us, owing to the delay in printing.

Bar and Slide-hives (*W. Johnson*).—The upper portion of all my flat-topped hives are covered-in entirely with bars and slides, thereby rendering superfluous the thick crown-board, seen raised in sketch, No. 8, new series. The 1⅜ inch bars are half-inch thick, and cut into similar lengths with the outside dimensions of hives from front to back, are fitted into them, by a partition being cut from the underside end of the bar equal to the thickness of the wood composing the front and back, and as far up as the lower side of the grooves with which the bars are furnished: therefore, enabling the slide to work flush thereon, as well as being flush with the top of the bars. The slides working in the bars keeping them three-eighths of an inch apart. The end window in the said sketch is objectionable, showing only one side of the end-sealed honeycomb, preferable behind; also the hive being minus of an entrance cut in front. Should the above description not prove sufficiently plain to your correspondent his better plan (did he not wish to order a full set of Stewarton-hives), would be to write to Mr. Wm. Eaglesham, Stewarton, for a honey-box or two. These would serve as handsome and useful supers for his other flat-topped hives, and at the same time show him exactly how the bars and slides are fitted. The bars in these are, however, 1⅜ inch broad for the facility of getting up massive honeycombs.—A Renfrewshire Bee-keeper.

Quantity of Food Required—Dorking Pullets Laying (*An Old Subscriber*).—It is quite impossible to state any quantity of food as sufficient for a number of fowls, because they eat much more till they arrive at a certain state of condition than they do afterwards. The sum we have named allows for no waste, and in most places as much is wasted as is eaten. If they are fed by hand, and only so long as they run after, and, therefore, really want food, they will not eat more than two-pennyworth of oatmeal per week. Dorking pullets hatched in April should lay in December.

Cochins and other Fowls (*Cochin*).—Cochins are good sitters, but they are not good mothers; they leave their young too soon, as they want to lay again at the end of a few weeks. If you were to buy some common hens for sitting, you have no certainty they would be broody at the time you want. There is more dependance on Cochins for early sitters than any other breed. You should not have less than two cocks for twelve hens. Brahmas and Cochins are the best winter layers. Dorkings are the best table fowls, and the most saleable.

LONDON MARKETS.—December 2.

POULTRY.

There is a great supply of everything at market, and no trade. Game is a perfect glut, and can hardly be sold at any price if we except Partridges, which are becoming scarce, as they always are at this season of the year.

Each—	s.	d.		s.	d	Each—	s.	d.		s.	d.
Turkeys	[illegible]	[illegible]	to	8	0	Grouse	2	0	to	2	3
Large Fowls	[illegible]	[illegible]	,,	4	6	Partridges	1	6	,,	1	9
Smaller Fowls	[illegible]	[illegible]	,,	3	0	Pigeons	0	8	,,	0	9
Chickens	[illegible]	[illegible]	,,	1	9	Hares	1	6	,,	2	0
Ducks	[illegible]	[illegible]	[illegible]	2	9	Rabbits	1	4	,,	1	5
Geese	[illegible]	[illegible]	[illegible]	3	0	Wild [illegible]	0	8	,,	0	9
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1						

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	DEC. 10—16, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
10	Tu	Salvia.	29.470—29.418	50—27	W.	—	57 af 7	49 af 3	47 m.0	8	6 52	344
11	W	Verbena.	29.584—29.504	46—33	N.	—	58 7	49 3	56 1	9	6 21	345
12	Th	Fuchsia.	29.980—29.949	45—36	N.	.01	59 7	49 3	4 3	10	5 56	346
13	F	Forced Roses.	30.063—30.030	44—32	N.	—	VIII.	49 3	11 4	11	5 28	347
14	S	Forced Hyacinths.	30.215—30.168	41—26	N.E.	—	1 8	49 3	18 5	12	4 59	348
15	Sun	3 Sunday in Advent.	30.220—30.154	41—29	N.E.	.02	2 8	49 3	22 6	13	4 31	349
16	M	Forced Persian Roses.	30.035—29.746	43—30	N.W.	.04	3 8	49 3	20 7	14	4 1	350

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 45.7° and 33.6° respectively. The greatest heat, 61°, occurred on the 13th in 1842; and the lowest cold, 11°, on the 13th in 1846. During the period 147 days were fine, and on 91 rain fell.

IS THIS POSSIBLE?

"OUR village a few years ago was famous for the display of flowers in the windows of the poor. Such flowers have now almost disappeared. I was informed, not long since, that the reason why they are not now seen is because certain ladies of middle age, intending to be philanthropists, had discountenanced the custom! Is this a sort of increasing goodness that prepares for the poor? I trust not; for I know the ale-house frequenting does not decrease here."

That is an extract from a letter which we have received out of Oxfordshire; and did we not know the character of our correspondent, we should reply to our own query—No! it is *not* possible.

We have the greatest respect for, and heartily approve of, district visitors who do their ministering wisely—they are then agents of comfort and improvement; but they strangely mistake the path they ought to tread, and become workers of evil to the poor man, if they teach him and his helpmate that to practise gardening and to adorn their home with flowers is not conducive rather than opposed to the performance of higher duties.

There have been, and there are, some minds which consider austerities and self-denials of the most innocent gratifications are modes of worship pleasing to God. Thus, we heard a lady, not now upon our list of friends, once say, "I never partake of anything I am fond of."

Now, so far from considering such sentiments pleasing to our Creator, we are well assured that they are a wicked misapprehending of His attributes and of the purposes for which He created man. His Maker intended him to be happy in this world—every contrivance throughout creation has for its object something beneficent. Whatever of pain and sorrow mar the enjoyment of life are the results of man's own evil doings—his abuse of the things of the world, not his legitimate use of them.

Among these abuses none is so all-prevalent as drunkenness. It is the curse of the poorer classes of the British Islands; and few are their felons who would not subscribe to the dying murderer's confession—"Had I kept from the drink I had not died this death."

To keep a man from the beer-house, the *first* step is to make his home comfortable and smiling; and it gladdens us to be able to say, that every year in all our Islands we see an increase of those "fragments of Paradise, though dimmed." In such, and we speak with authority, dwell the most sober, industrious, able, and godly labourers of our land.

We know many, very many, such cottages; scrupulously clean within, with a tidily kept, well-stocked garden around, and a row of Geraniums and Fuchsias on their window-sills. They are cottages of which the man is proud—deservedly proud. He does not feel degraded by being the tenant; he feels that he is a happier man by being there rather than in the tap-room; and that feeling of happiness is the stepping-stone to the higher sentiment of gratitude.

It is of no avail to say, as we have heard said, "He ought to feel that gratitude without those adjuncts. He ought to read tracts and his Bible in the hours he devotes to his gardening." It is of no avail to say this, not merely because man will not give up all his leisure to those books, but because it would be contrary to his duty to do so.

It is a man's duty to employ some part of his leisure so that he may add to the comforts of his family, and yet so recreate himself that he may be more fitted for his daily labour. Now, gardening effects both these purposes—to the labourer it is an amusement, and it adds to the provisions for feeding his family.

A wise endowment of man's nature is a tendency to congruity. He is dissatisfied with violent contrasts. Thus, the tidy garden is always associated with a tidy house and tidy clothing. We never knew an instance to the contrary. Cleanliness, says the proverb, is akin to godliness; and the district visitors' ministering is more effective, is an easier task, with the cleanly garden-loving cottager than with the tenant of a dirty cottage and the husband of a slatternly wife.

When we took up our pen we had no intention of writing such a long homily; but we have the subject upon our heart, and then out of its abundance thoughts will flow copiously. It rejoices us to know that the experience of a vast majority of the parochial clergy coincides with our own—gardening makes a man a lover of home, and a lover of home is rarely an ungodly man.

Even whilst we are writing these words we have received this testimony—"Our parish is not what it used to be. The horticultural show and the clothing club have wrought a vast alteration in the appearance of our people and their dwellings. Their habits, too, are changed. There is no Sunday-cricketing, and in five years the number of communicants has doubled."

PRESERVING ICE.

I have seen the description of an ice-house of Mr. Blundell's It is one of the very best-constructed of all those old-fashioned ice-houses for keeping ice on the "preconceived-notion" of the last two or three generations; but if all the scientific men of Europe, since Humboldt was thirty years of age, had put their heads together to devise a plan for wasting ice, they could not, possibly, have hit upon a better plan for doing it than these preconceived-notion ice-houses, and there is not one of them in the three kingdoms that I would take as a gift, if I were going to keep ice for myself.

My early pursuits led me into the laboratory of Nature, where ice is kept to perfection, and I can give the natural history of keeping ice, and of wasting it, both at sea and on land in all parts of the world. I made the subject a hobby during the last forty years, but my notions were ripe on it before the beginning of that period.

When I saw the first ice-house and began, in the civilised world, to talk about keeping ice, all my "preconceived notions" on the subject were turned upside down, and I was amazed to learn that all around me were perfectly daft on what seemed to me so plain a subject. I told the tale of the secret of keeping ice on a plan that was based on the law of Nature, as is well known to the early readers of this Journal. The Americans took advantage of that plan, and they succeeded with it to perfection; or if they ~~did not,~~ Dr. Lindley is in for it, for he even told his readers, not long since, the invention was all their own.

Now, I write this for the purpose of breaking up preconceived notions about ice and icing, just as I would break up iced things themselves in the still-room after breakfast, in order to begin a new start. And we start at once to the gulf of Mexico, take it for granted there is a burning sun and a stiff land breeze there, and a huge iceberg still as big as when it rounded Cape Breton. Now, what are your own notions about the effects of the sun and breeze on a huge iceberg—say as big as the Crystal Palace, in those waters, supposing the thing to be possible as I put it? Shall I guess? Would it not be melting down and dripping like a tub of butter before the kitchen fire? Of course it would, if we had no better experience than preconceived notions that it could not be any such thing, or anything like it. Now, I never saw an iceberg nor the gulf; but I have no hesitation in saying that no one ever saw an iceberg dripping anywhere, with a strong sun and a strong wind playing against it at the same time. Such a thing could not happen under the present condition of things, even supposing the rays of the sun to give 100° of heat, and the air 80° to 90° at the same time. The effect must necessarily be, on such a huge mass of ice as I have supposed, to have the whole of its surface quite as dry as the surface of the glass on the Crystal Palace in the hottest day in summer, save and except a certain space all round the lower portion of the sides next above the water line.

Here, then, is plenty of elbow room for the incredulous and for preconceived notions. If the heat of a tropical sun, assisted by a strong land breeze at 80°, cannot melt ice when packed in vast quantities, how can you prove that a current of air at 65°, without the help of the sun at all, has any power to melt ice on a small scale in the common ice-house? I say it never could have had such power under the circumstances in any portion of the globe, whether you can believe or not.

To ventilate an ice-house when the air is at the freezing-point, as Mr. Blundell suggests, is of little or no use whatever in saving the ice, for then the air round the ice not to be in motion would be better, it would much sooner get intensely cold. You never want a current of air till the ice begins to melt: the current will not keep the ice from melting in July, and there is nothing under the sun that will. But a current of air will keep the melting at a minimum of waste; and a column, or volume rather, of confined air round a heap of ice, is much more wasteful to it than if the sun was let in upon it at a temperature of 96°. More room for doubts, fears, and scepticism.

I know from my own experience in this matter how difficult it is to get rid of preconceived notions. Thousands will not believe one word of the natural history of the iceberg—it goes against the grain altogether. But I shall give the question another turn where we can have witnesses by the thousand to prove the correctness of my statement. Every reader may have his witnesses, and I shall call none, but shall bide by what they say.

We take a tour of the Alps at the end of August, keep to the Italian side of the mountains full facing the sun, keep to the middle height of the mountains at the same time for safety—that is, to be safe from an opposition law which is in force higher up the ascent. The law of perennial congealation affects the opposite law much lower down than the "snow line." Well, we come upon a huge mass of snow which was drifted into a great hollow. The sun is 96°, and the air in a strong breeze not quite so warm, if we could make out the difference between the two. Here, then, are exactly the same conditions under which we left the iceberg in the Gulf of Mexico, barring the one I mentioned next to the water line. If the iceberg was melting [illegible] butter, how much water could one gather in such a day [illegible] the face or surface of one acre of that huge mass of snow? [illegible] all tr[illegible] but they, too, tell incredible things. Then call the Sw[illegible]ainers—there are plenty of them in London, [illegible] to be the best ice-keepers of any. Now, there is [illegible] of a vast mass of snow on the south side of the Alps, or in any other part on the face of this earth, with the surface of it even damp on such a day. We said one acre was the extent of the surface of our experimental patch of snow, and I maintain you could not possibly damp a cambric pocket handkerchief all over that surface, and I was never there nor out of this island. Then, if the current of air at 86°, assisted by a strong Italian sunny day is not able even to damp the surface of iced snow, how can a current of air at a temperature of 65° melt ice itself, and no assistance from the sun, down in the ice-house? Dry air in rapid motion never melted ice since the flood, and from that period dry air in rapid motion has been the best agent yet discovered for preserving ice: and I assert without the smallest hesitation, that air which is not dry and which is not in motion, is the best agent in Nature for wasting ice.

I could give the proof in the laboratory of Nature herself, where I took up my notions from seeing the process in actual operation; but I shall refrain unless I am pushed into an ice corner.

I shall give a more practical turn to the subject now; and suppose that I did accept of one of the present and old-fashioned ice-houses as a gift, and set about arranging it as I would have it to be useful to me, the first thing I would alter would be the waste-drain at the bottom. There is a syphon or air-trap to exclude the air at the mouth of the waste-drain. That air-trap I would pull up, then the whole of the drain, and I would make an air-drain of it about 10 inches wide and 10 inches deep, with a waste-water-pipe drain down the centre of it to the open air, where I would place a trap-door to shut out or let in a current of air as I seemed to want it, and as the outer air seemed to me to be in a fit state for drying the sides of my ice all round the heap.

The present mode of excluding the air from the bottom of the ice-house I take to be the most unscientific construction in all our domestic arrangements. Ninety-nine pounds out of every hundred pounds of ice that are wasted go through the waste-drain for want of bottom ventilation, and from no other cause whatever. Of course, I would have no brushwood, or straw, fern, or stubble at the bottom to place the ice on—nothing but a strong lattice of oak or red deal, and on that I would prop planks on end to stand upright against the walls of the well and to stand 1 inch apart, the one from the other, and I would continue the planking that way as high as the ice, and leave a free passage out at the centre of the dome.

This, you see, would be having a nonconductor and a volume of air (behind the planks) all round and at the bottom of my ice; but my ice would melt for all that, and all ice will, more or less; but my ice would thus be constantly at the very lowest degree of the melting scale in such places, and I am not aware that there is any other substance by which I could reduce the melting so much.

I am quite certain I could make an ice-house that would hold the ice better than by this plan. But there is only one way, and this is the principle of it, of getting the maximum of ice out of any one of those which are made on preconceived notions, for the notion was entire and altogether highly unscientific and quite contrary to the law in Nature which rules the subject.

D. Beaton.

FUMIGATION WITH TOBACCO PAPER.

Recently we had business communications with Messrs. Griffith & Avis, Tobacconists, of Coventry, about the purchase of some of their tobacco paper. In one of the letters of the firm to us they say, "Never use anything to light our paper but ordinary brown paper; some use cinders, forgetting they throw off sulphur." Using cinders had been our mode of procedure, except occasionally in the case of fumigating tender-foliaged plants, we used pieces of brick made redhot at the furnace fire. We determined on trying this plan, and did so a day or two ago, and as the minutiæ may be of use to others, here they are.

We generally use a No. 12-pot, a cracked or damaged one, of which there are unfortunately too many about, collected some refuse paper, papers that bulbs had been wrapped in, lighted the bottom piece, then half filled the pot, pressing down a little, so as it might burn but not blaze, then put on the tobacco paper, quantity according to the size of the house (of which no one can judge till they have fumigated once or twice, as some houses are lazed with wider laps than others). In our pots we have a ound hole at the side just level with the pot's bottom inside, nd in this we insert the nozzle of a pair of bellows, if the aper from being very damp does not burn freely.

The house will soon be full of smoke, and with the paper wasting slowly the house is kept full a long time. We generally fumigate in the evening—say 4 or 5 P.M., at this time of the year, and leave paper burning till morning.—N. H. P.

GRAPE VINE PRUNING.

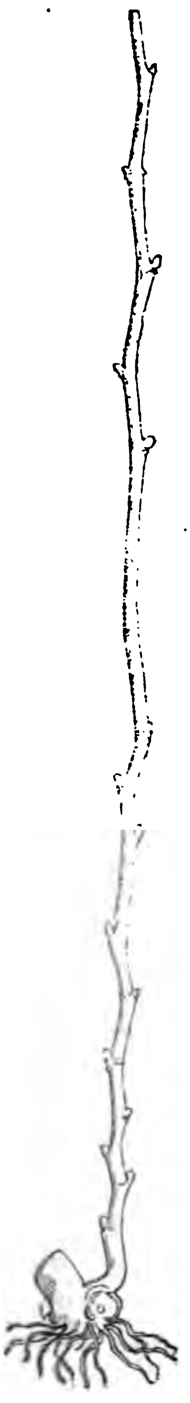


Fig. 2.

Of all the fruits we cultivate, the Vine claims precedence, whether we consider the wholesome quality of its produce, or its importance in wine making; the interest which has ever been attached to it from the remotest ages of the world, or the gratification it affords to every man "to sit under the shade of his Vine or his Fig tree." If proof of the mutability of our English climate were wanting, the existence of vineyards in many parts of the country formerly, would go to prove it; for in these very localities, in the present day, Grapes do not ripen in one season out of three with certainty. In the old town of Abingdon (near this place), formerly written Abbey Town, there existed a large abbey, and as the ecclesiastics of old did not neglect to provide things temporal as well as spiritual, there was attached to it a vineyard. But such an experiment would not succeed now. The culture of the Vine in the open air cannot now (unless in our southern counties), be depended upon, and those who do not wish for sour Grapes, had better not attempt it. The remarks which follow upon pruning will apply with equal bearing upon in-door and external cultivation.

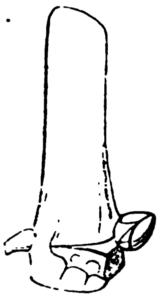


Fig. 1.

Vines are generally raised from small cuttings with one bud and a little piece of last year's wood attached to it (*fig.* 1). Sometimes they are raised from layers, but this is an obsolete mode. The cutting being placed in a small pot in a genial heat, soon emits roots, and after receiving the necessary shifting and attention during one season, becomes a young Vine (*fig.* 2).

Our young plant has now arrived at the state in which it would be offered for sale in the nurseries, and we will suppose that the requisite number and proper selection of Vines for either a house or a wall has been made. Whatever the season of planting may be, the young Vine must be cut back to two or three of its lowest buds, for the purpose of concentrating its energies, and in order that the sap which would have nourished an indefinite number of weak shoots, may produce only one vigorous growth. If all other circumstances are favourable, the Vine will reach the top of the house the same year. It is then time to decide whether a separate Vine shall be trained to every rafter, or whether one Vine shall fill a portion or the whole of any allotted space. If it is wished to have several bearing stems to a single plant, the Vine must be again cut down to two eyes, about 18 inches in height, and the shoots which grow trained horizontally right and left; these are intended to form the main branches from which other shoots will be trained perpendicularly, as in *fig.* 3. The distance at which the perpendicular shoots may be, must be regulated by thinning the buds on the shoot *a* at discretion. We will now suppose that each bud has made a vigorous shoot in the third year from planting, the Vine will have its full figure, and fruit will be expected.

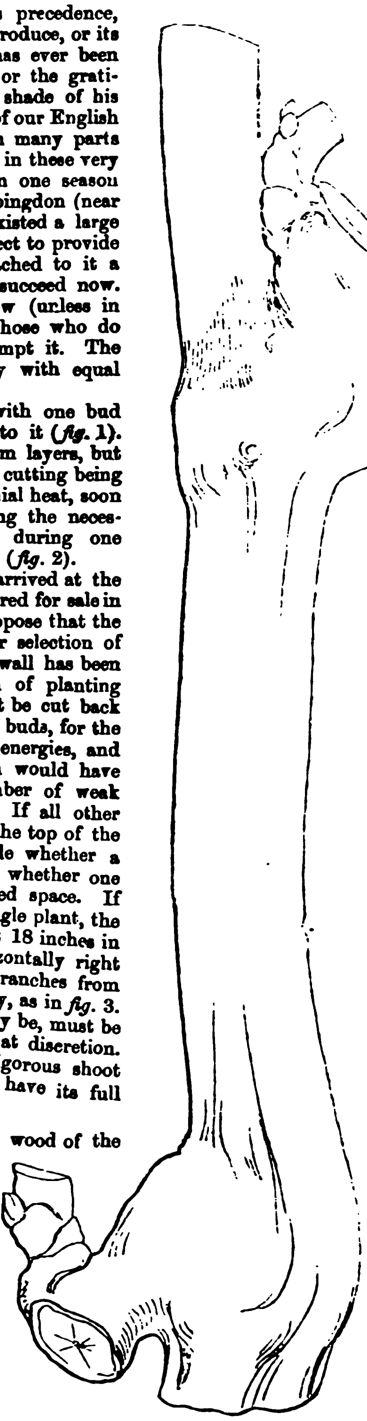


Fig. 5.

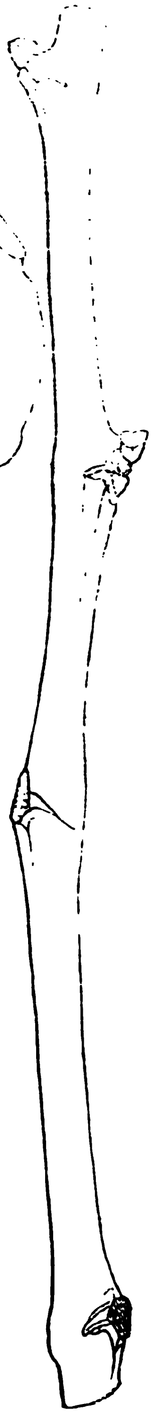


Fig. 4.

The fruit of the Vine being produced from the wood of the second season, it becomes necessary now to decide in what way that wood is to be produced so as to furnish an annual supply of fruit-bearing shoots. If all the eyes produced on the growing shoots were allowed to break, there would be a crowding and confusion of foliage, and too many bunches of Grapes would be produced. Now, as it is better to prevent a waste of the sap, than to remove either too many leaves or bunches after their production, the eyes must be thinned, if short-jointed wood, taking out two and leaving two (*fig.* 4). This will leave the buds which are to form the future spurs upon alternate sides of the main stem (*fig.* 5). When the Vine again makes shoots, one or more bunches of Grapes will appear at the third or fourth joint of young growth, which must be reduced to one only, and the young shoot beyond it stopped with the finger and thumb—thereby only allowing as much foliage as can be fully exposed to the light; this stopping will cause other shoots to push from the axils of the leaves of the first shoot, which must not be removed, but stopped again at one joint from their origin; were they taken away entirely, it would have the effect of bursting the buds on the shoots which are to form the next year's spur.

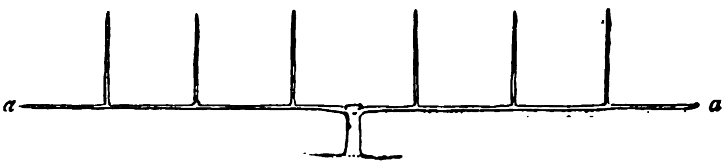


Fig. 3.

We will now suppose that a young shoot of the previous year has produced fruit for the first time during the past year, the shoots on which the fruit was borne diverging at nearly right angles from the stem. They will now form what are technically called spurs, and are to be shortened back to within one or two eyes of their base. In addition to the buds formed on the young wood, adventitious ones sometimes push from the base of the old spurs; these, if well placed, must be carefully retained in order to keep the spurs "at home," and prevent them becoming unsightly objects. Such is the mode in which what is called the spurring system is managed, although some cultivators prune the spurs off close to the stems of the Vine, and the crop is produced from buds which push out from the naked stems. This can only be applied to Vines of great vigour.

The fruit of the Vine being produced by the wood of the previous year, there is another mode of procuring it, which is much practised also. It is called the long-rod system, and consists in having an annual supply of young canes from bottom to top of the house or wall. These have their buds thinned as has already been described, but after producing fruit they are cut away, to be replaced by other shoots from the base. This system is more favourable to the production of fine Grapes with the Muscat kinds, and the Dutch Hamburgh succeeds better so than by spurring. If large bunches are desired this is the way to get them; but for Grapes for market there is no better system than by spurring, the object being to obtain medium-sized, compact bunches, with perfect berries, of large size and good colour.

There is a pruning of another kind—the thinning the berries. The skilful performance of this is of much importance, and the sooner it is done after the formation of them the better. The operator should be provided with a pair of fine-pointed sharp scissors, and should wear a thin, clean, and soft glove, to prevent the perspiration of his hands coming in contact with the tender skin; his head should also be covered with a silk handkerchief, to prevent injury from contact with the hair. Too much care cannot be taken in the performance of this work. The thinning must be accomplished gradually—say at two or three times, taking care always to leave the most prominent berries, and to give greater space to the larger growing kinds. Frontignans and Muscadines, with Black Prince Grapes, are not improved beyond a certain medium of thinning the berries, and care must be exercised not to destroy the compactness of the bunch by immoderate use of the scissors.

Early pruning is most desirable, nay, essential, for the Vine; it should be done as soon as the leaves fall, for this reason, that the roots are slowly accumulating sap during the period of repose, the whole of which is intended to support the buds in their young state; and, of course, the fewer they are in number the more vigour they must possess. The Vine, too, of all trees is least calculated to endure the evils of late pruning, and when this occurs it always bleeds, by which is meant that the sap exudes in copious quantities from the orifices of its channels, which have not the power of collapsing. The effects of losing a large quantity of this fluid just at the time it is most required, is to induce debility, and in extreme cases death. Various nostrums [illegible] been recommended as cures for bleeding, but it [illegible] best t[illegible] occurrence. We say, therefore, prune early; o[illegible] apply differently to early forced or late Vines [illegible]—[illegible] BAILEY, Gardener, [illegible]

VISITS TO SOME OF THE FRENCH NURSERIES.—No. 4.

THE ENVIRONS OF PARIS.

THE difference between the English and French taste for flowers and plants strikes one sufficiently at all times, but especially so when visiting the smaller nurseries around the metropolis. In the environs of London we find nurserymen, both large and small, who grow every variety of plants—some for the supply of Covent Garden Market; some for the gratification of individual taste, such as the Orchid and stove plants for the wealthier class, and the florists' flowers for those who have less means at their disposal; and others myriads of bedding-out plants for the vast number of persons who in their little villa gardens delight in having their beds of Verbenas, and Scarlet Geraniums. One is struck in Paris at the total absence of all this. Two objects seem mainly kept in view—the decoration of the in-door apartment, or some large and showy plants for the shrubbery or public garden. It would be vain to look near Paris for such an estalishment as Mr. Turner's, of Slough, or Mr. Henderson's, of St. John's Wood; and even where we find the cultivation of anything like a florists' flower, such as the Phlox or the Rose, it is the foreign trade which is most thought of. This arises, as I have before said, from the want of real love for flowers. A French gentleman or lady admires, but does not love them; they think them pretty, they help to set off their room when they give a ball, and hence Dracænas, Cordylines, Chamærops, Phormiums, and such-like plants have great charms for them, and are in great demand; but to spend the time, money, and trouble on them, that are so cheerfully accorded around our great city, is quite foreign to their notions. Greenhouses, instead of being the rule as with us, in most good-sized houses, are there the exception. This was the common subject of complaint amongst the French nurserymen, and I could see had some ground in it.

MONSIEUR LIERVAL,

of Ternes, between the Bois de Boulogne and the Parc de Montceaux, is well known to many admirers of the *Phlox*, as the most successful raiser of seedlings in France, or, indeed, elsewhere. Liervali, Madame de Wendel, Dr. Lacroix, and a host of other varieties, sufficiently testifying to the skill with which he has worked, and to the success attending his perseverance. The autumn having been a most beautiful one, they had continued in bloom up to the period of our visit; and although, doubtless, individual varieties were not as fine as earlier in the season, yet one could form a tolerably good estimate of them. Now, the Phlox is admirably suited to the dry, clear atmosphere of Paris. It is not liable to be shattered by rains as with us, even in the south of England, and I, therefore, saw it under as favourable circumstances as could well be. Is it, then, likely to be that universal favourite we were some time back told it would? Is it to supersede the Dahlia, and to be regarded as far surpassing that grand autumnal flower? My own opinion was decidedly expressed some time ago, and I can only say that it was fully confirmed by what I saw at Monsieur Lierval's. He not only grows a large number of seedlings himself, but Mons. Fontaine, and others, grow upwards of 40,000 for him. From these the best are selected for his own ground, and for the purposes of propagation; and I could not but be struck with the great sameness of colour and marking—white with a dark eye, and crimson or rose with a deeper eye of the same, constituting, apparently, the types of all.

Before they can ever, then, be universal favourites, some variety of colour must be introduced into them. Whether this is possible must be a matter for the consideration of raisers; but we do now want some variety, and even were this overcome, the injury that they so readily receive from rain and winds will be against them.

Monsieur Lierval, out of the large number of seedlings, has selected six to be sent out this autumn. Some of these I saw, and certainly, as far as shape and size are concerned, they are an advance upon their predecessors. In sheltered situations, and in mixed borders, nothing looks prettier than a good Phlox, and anything I have said in disparagement of it is only intended to counteract too high-flown expectations as to its capability of becoming a first-rate florists' flower.

To Monsieur Lierval the French are indebted for the numerous varieties of *Canna*, which now form so prominent a feature in the public gardens of Paris, and France generally; large clumps of them being found in the Champs Elysées, the Tuilleries, around the Tour de St. Jacques, and other places. Some years ago he set himself to the task, and now he has quite a *specialité* for their cultivation. They certainly are very fine, and give quite an exotic character to the garden, and take away that extreme flatness which is the eyesore in the bedding-out system as practised amongst us.

How it rejoiced my heart to read in THE JOURNAL OF HORTICULTURE last week, from so able a judge as Mr. Fish, these words—"The mind longs for change. It pants after a massive background to throw back the dazzling colours; and amid the bewilderment of such splendour, it sighs for the relief of light and shade instead of level massive gorgeousness." Just so: and as it is in dress so in this. Betsy must wear a crinoline as well as her mistress, and Jeames thinks it a hard thing if he cannot wear laydowns and mauve ties as well as his master. So every little gardener (like your humble servant), must bed out too, for to be out of the fashion is to be out of the world; and if my lord close by has his geometric, of course we must try it.

Now, if these Cannas would but do here, they would be grand things to come in for this purpose. And doubtless when the new variegated plants from Japan, which Mr. Standish is now introducing to the world, become more common and larger they will add a new feature to the English garden.

Monsieur Lierval was busily engaged preparing to cut down his Cannas when I was there. They are cut pretty close, and then stored away in dry cellars on sand, so as to keep them clear of frost and damp, and planted out in the following spring, the roots easily dividing; the habit of the plant being to throw up suckers. Amongst the prettiest and most remarkable varieties I noticed carnea, musæfolia, minima, and Van Houttii, the latter with yellow and scarlet flowers of considerable size. Generally speaking the bloom is not of much importance.

Another plant now used in and about Paris for ornamentation is the Ricinus (Castor-oil plant), which attains in a single season the height of 8 feet or 9 feet. One variety cultivated by Mons. Lierval, and called sanguinea from the dark red character of its stems and leaves, is very ornamental, and was then in full fruit, bearing large numbers of its curiously marked seeds. The greenhouses were filled principally with Geraniums and soft-wooded plants, which Mons. Lierval sends to the flower market held in the "Place de la Madeleine;" while another house was devoted to the culture of the Cordylines and kindred plants for the purposes I have before alluded to.

The aspect of the nursery was quite foreign to our notions, having rather too much of negligence about it. Business is attended to, and nothing can be kinder or heartier than the manner in which we were received by Mons. Lierval and his son. Indeed, the geniality seems common to the craft on that side of the water, as, indeed, it is with some few exceptions, on this side also.—D., *Deal.*

RENOVATING OLD ORCHARD FRUIT TREES.

IN my gardens and orchard are many large fruit trees, Pears principally; but also Plums, Apples, and Cherries, which have had no attention given them for years—six years, at least, I am told: consequently, the crops are inferior every way. The bark is generally very ragged or scaly, and the trees full of spray and long, thin, pendulous branches. Will you inform me what is the best mode of proceeding to restore them to the best possible condition? They are old trees—twenty or thirty years old—but are such an ornament to the grounds I cannot remove them. —R. W.

[Your case is one of a great many, and we thank you for bringing it before us; but if you had stated a few more particulars respecting the situation, character of the soil, and other matters, it would have been easier to have suggested a remedy; but, supposing the worst evil to be against you—that is, superabundance of moisture in the soil, then drain it as quickly and thoroughly as possible by all means. This done, thin out some of the small spray wood, and also some of the old branches; but do not be too severe in that way on old trees, for, like animals and the human family, severe amputation is not easily got over late in life, so that extensive fruit-growers prefer destroying an old orchard to over-pruning it when it gets old; but the trees may be made more orderly-looking by cutting out all awkward-grown branches, being careful, however, to cut as little as possible from the Cherries. Apples and Pears may be cut more freely; and if it be advisable to introduce other kinds, cutting the trees down to something like a dozen forks or heads for grafting may be advantageous, if the trees be not older than what you say; but if very old and worn out it is useless to graft; for, although the grafts may grow and even prosper for three or four years, it is usual to see such trees die off at some unexpected time. But, supposing the trees to have been slightly pruned as described above, the next thing is to whitewash the bole and part way up the large branches with a thick coating of lime whitewash; and some mild morning in April, when there is a heavy dew, or when the trees are wet with fog or rain, let a man dust them all over with freshly-slacked quicklime. Much of this will, of course, fall to the ground; but a part will stick to the moss-grown branches, and lime being at variance with moss, will kill much of it: of course some of it may be removed at pruning time; but it is not easy to remove it all, and the above is the easiest way of destroying a part.

If your orchard be on ground kept in tillage, much good will be done by only digging slightly between and amongst the trees, as deep digging and heavy cropping are inimical to the welfare of the trees. Cherries do best on grass; but it is not necessary for Apples or Pears to be so. Much, however, depends on the subsoil, and something on the situation; but all these things added together tend to make an orchard look older than it really is; for under favourable circumstances it ought only to be in its prime at twenty or thirty years old. If, however, the remedies given above be not attended with the desired result, grubbing up is the only alternative; but do not plant trees there again until it has been a year or two under cultivation of another kind, and all draining and trenching that may be required may be then effectually done.]

A FEW DAYS IN IRELAND.—No. 7.

GARDEN FARM, DRUMCONDRA.

THIS truly beautiful place, situated on the slope of a brae some three miles north of Dublin, commands one of the finest views of the metropolis, from east to west, the Dublin mountains, and the summits of the Wicklow hills, and is the property of Mr. Niven, than whom no man living could more thoroughly appreciate its charms and pleasing associations.

More than twenty-five ago we formed an acquaintanceship with Mr. Niven in the "Gardeners' Magazine," and having never seen him personally until we met him the previous day at Mr. Mackie's, we could hardly believe he could be *the* Mr. Niven, so young and slim and active he looked; whilst we had formed a sort of idea of a great, tall, stout man, with an expansion of body somewhat commensurate with the largely developed refined taste, the artistic and poetical eye, the elevated thought, the correct judgment, and the untiring energy to improve and make better each and every thing that came in his way, that we for long imagined to be his peculiar characteristics. And, now, after having passed through the initiatory trials and troubles of gardening, after having given the benefits of his genius to the vice-regal lodges at the Phœnix, and the beautiful botanic garden at Glasnevin, it was very pleasing to find him at an early hour in the morning, not "sitting under," but actively at work among his own Vines in that little paradise which he has formed out of what previously was a tangled scene of briars and thistles, desolation and ruin; the very strength and luxuriance of the weeds, which would have appalled many, telling him that such soil rightly used, would be equally fertile in producing vegetables, fruits, flowers, and shrubs, for the use and pleasure of man.

The title "Garden Farm," appropriate as it is, will not give a right idea of the place to our readers, unless they can associate with that all the interest and neatness of a well-kept pleasure ground and flower garden. The entrance gate of elegant iron workmanship, with its suitable pillars, stands at right angles with the highway, but sufficiently back from it to permit of a nice sweep on each side bounded by a wall. A little from the gate there is a pretty lodge, so that the gate may be properly attended to. Besides the dignity which the above sweep gives to the entrance, room is provided for carriages to wait, without intruding on the highway; as, though the place might by some be considered a demesne, Mr. Niven just calls his pretty home a cottage, and, therefore, neither carriages nor horses are allowed inside the gate. We found out this from noticing how nice the road or broad walk was kept. The Lord Lieutenant and the Lord Mayor must here be on a par with the visiting gardener. Having only an umbrella for a pony, we could take it with us. There is a back way for carts taking manure, of which vast quantities are used, and bringing and removing other things; but Mr. Niven escapes all the anxieties of horses and stabling, by hiring at so much per ton when wanted, and finds that it is for him by far the most economical.

The breadth of this fine walk contracts a little after you pass the first curve from the gate, and then about a hundred yards more or so, it is joined by another at right angles some 6 feet wide, that takes you up the slope of the hill for some two hundred yards to Mr. Niven's cottage. The sides of the first walk, in addition to commoner things, are well stored with all the newer shrubs and trees in excellent condition, and so as here to conceal all traces of the market garden. Beyond the point of junction referred to, the walk is carried on, but gradually assumes the character of the useful among acres of fruit trees, and Rhubarb and Sea-kale. The narrower walk leading to the cottage has a new house on each side, about 40 feet from the walk, of which Mr. Niven has kindly sent us a section. From these houses to the walk the space is filled with flower-beds. Nearer the cottage or mansion the ground is chiefly occupied by the finer shrubs and smaller evergreens, but grouped instead of being arranged in lines or square beds. The house has a terrace landing of its own, a sloping bank, and steps in the centre, and some fine shrubs on the slope, and all the openings carpeted with Cerastium arvense.

We forgot to mention that there is a wide margin of the same by the sides of the walk from the gate, which, without examining, we took to be the Moss Saxifrage: it is close, compact, and green—a sheet of white in early summer. It gets a skiff with a scythe once a-year, and the sweepings are used for covering fruit trees in pots to lessen evaporation in summer; for here every—even the smallest—thing is made to serve a purpose. Beyond that sloping bank there is a regular flower garden of shrubs, chiefly the best and most valuable evergreens, Cupressus, Thujas, Wellingtonias, Araucarias, &c. The beds are laid out quite artistic, some of them have only from three to five plants; but all the beds divided from each other by some two-feet gravel walks, and each bed is surrounded with its own low hardy edging, as Crassulas of sorts, Sedums of sorts, Silenes, Gentiana acaulis, Thrift, especially a very dark variety, Cerastium tomentosum, Sempervivums, and Saxifragas, &c. Here is a fine reserve for alpine plants. Of course the fine little trees in all these artistic beds are for sale, as well as those elsewhere; but it requires little more trouble to take them up and replace them than if the same work was done in nursery lines; whilst in such a position the so managing them gives an artistic ornamental character to the place that any common arrangement would fail to effect.

Having mentioned the edgings of these beds, we must not omit to state that a little farther westward a long-raised bed, some 5 feet wide, is devoted to a rich collection of alpines; boards and stakes keep up the sides of the bed, some 18 inches above the ground level, and thus the plants are kept from many enemies, and much easier examined by the lovers of the minute in vegetable beauty. In passing we may notice, that the Cerastium arvense, of which there are such quantities here, seems a darker-foliaged variety than what we used to consider as the arvense, which had a little of the grey in its small foliage, and this led us to think at first that it was a variety of the Moss Saxifrage. For shady places, and even in sunny places, where it can get something cool to cling to, as little stones, &c., the Saxifraga hypnoides makes a fine verge, where there is little necessity for trampling or sweeping; and this Cerastium of Mr. Nivens would be even easier managed, and would yield the attractions of a green bank or verge, at a tithe of the ultimate expense of a grass one well kept. Some amateurs stare when I tell them that their grass verges will be more expensive than their flower-beds; but they begin to find out what it is to keep them nice, by machinery, mowing, and clipping, and picking, and sweeping the edges [illegible] week, or ten days at farthest, all the summer time. Contrast this with the switch of a scythe once a-year.

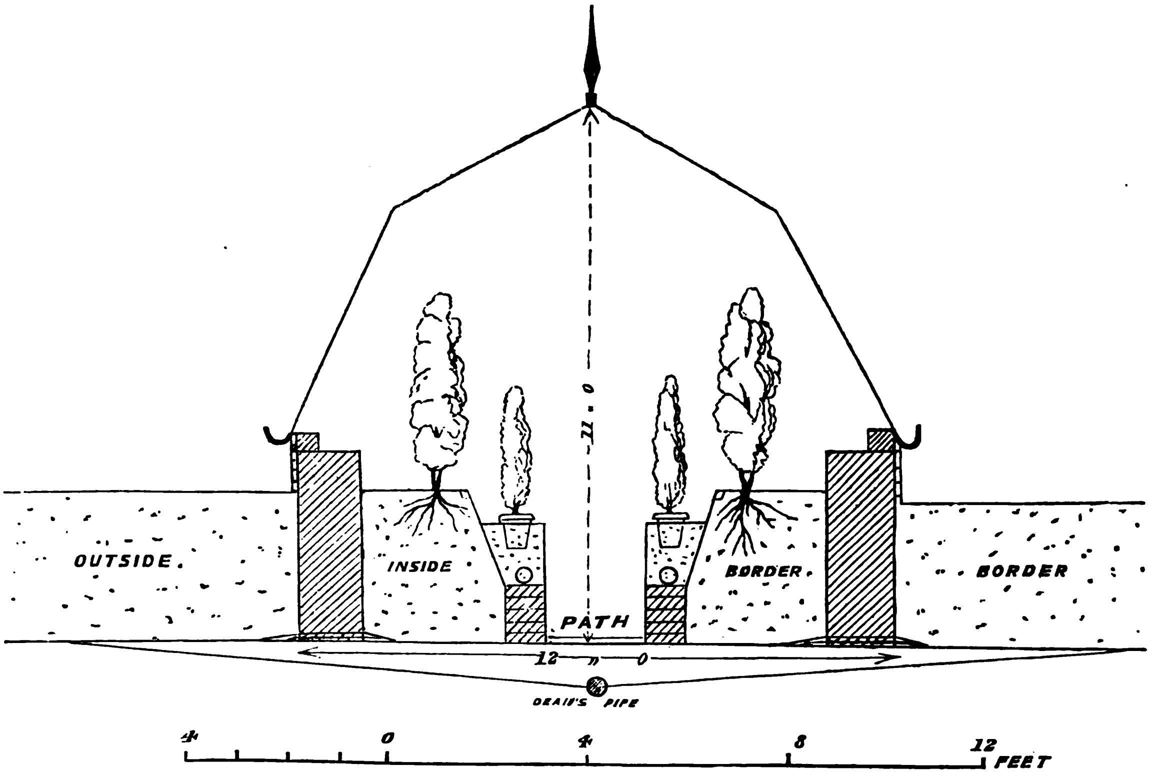
In the alpine-bed, among others too numerous to mention, are some fine little Gnaphaliums, and especially dioicum; Erinus alpina; Sempervivum californicum, a beautiful gem for [illegible]ting round some little flower bed, where the flowers were only [illegible] inches in height [illegible] same genus is ciliatum crustatum and others; Hernieria glabra, a green trailing plant much smaller than the Cerastium spoken of above; the beautiful dwarf-trailing Thymus azoricus; Silene exscapa, for clinging to a stone or rock; Saxifraga in great force, some of the rarest being, perhaps, Rachelie; Caryophalea, a very dwarf sort with large white flowers; and such kinds as oppositifolia, and oppositifolia alba; Draba aizoides, Aizoon, pilosa, &c.; Arenarias, as balearica, so close in habit, and laricifolia, so close, and green, and creeping when the white flowers are gone; Phlox subulata, and all or most of the best dwarfs as procumbens, verna, setacea, &c.; Frankenia lævis, a pretty low green trailing plant; and so are corymbosa, mollis, and ericifolia, which latter is a little tender, as it comes from the Canaries; Veronica saxatilis, a pretty minute beauty; and numbers more equally small, as serpyllifolia, &c., and the pretty-leaved trailing Polygonum complexum, &c.

North from these alpine-beds are large quarters of fruit trees trained to trellises, and of all sizes, so that a gentleman might come with his gardener and pretty well stock his walls and quarters at once. These trellises are formed by driving in stakes along the centre of a ridge, and then fastening slight rods lengthwise on each side of the stakes. These ridges are considerably elevated, and in some cases are 9 feet apart, and in other cases 11 feet or more; but when that width and wider, there is generally a row of dwarf bushes or pyramids in the valley between the ridges. Though the trees be planted on each side of the trellis, yet from being so elevated, and large and small so regularly moved, they can be raised easily with a fine supply of roots, and if planted early would bear the following season. Apples, Pears, Cherries, Plums, &c., were in excellent condition. In other quarters trees were trained as bushes and pyramids, and pinched in so as to be masses of flower-buds. Other places had lots of trees in the bush and pyramidal style, seemingly more for fruit than for sale; and in these the ridges were covered as undergrowth with Strawberries, and apparently in the highest luxuriance. Besides these banks acres of ground are devoted to Strawberry culture—some planted on the level, some on the rounded bed, and all looking well. Many sorts are grown, but Mr. Niven thinks none for quality and quantity comes near to the Princess Frederick William—one, we think, of his own raising, and which must be prolific indeed, as on comparing it fairly with every other fashionable and well-proved kind, he found that it yielded at least a third more produce.

Other small fruits are cultivated to a great extent, and chiefly for the fruit being sent to market. There were great quarters of Raspberries that you could scarcely see into, they were so luxuriant, and several plantations of the last and the present year. These two are raised on banks at first, to give more room for green and other crops between them for a year or two, and by that time the dunging and enriching the ground brings it pretty well to a level, and the roots of the Raspberries monopolise all the advantages. Rows and quarters of Currants and Gooseberries are nicely pyramided and summer-pinched, to concentrate the fruit-buds, and thus not only enable the fruit to be easier gathered, but secure the greatest amount of fruit in the least possible room. Plenty of these and most fruiting trees may be raised at once for orchard-houses or miniature fruit gardens. For those who prefer plants in pots, we observed many nice little plants of Plums, Cherries, Apricots, &c., plunged in pots out of doors; but most of the young bush and pyramidal Peach trees, and the tenderest Apricots, &c., were still in the orchard-house, and in such a wet season be likely to continue there until the leaves were dropping at least.

This orchard, or, rather, heated house—as it is heated very successfully by earthenware pipes with cemented joints—is 75 feet long and 24 feet wide, with a raised bed on each side, and a wide raised bed in the centre, with a pathway on each side. In the side beds Vines are planted, the roots also feeding outside; the surface of the bed was also filled. The wide centre bed was crammed with nice young, Peach trees, all summer-nipped, some in pots, and some out of pots, as the moving them was found to be no trouble. Looking at them, you could not tell which were in pots or which out, partly owing to the equality of growth and partly to the whole surface of the bed being carpeted with the mowings of Cerastium arvense. The little fire heat was found of use for them in such a wet dull season as it has been in many parts of Ireland. Mr. Nivsn told us there was a growing demand for such plants, and that if they did not all sell, the fruit would. The house looked rather tempting before breakfast on the 14th of September. The Vines were confined chiefly to the width of the side bed and the width of the passages overhead; but a rod was allowed to cross the house every 12 feet or 15 feet, which gave it an elegant appearance. Over that space the bunches were pretty well as thick as they would grow; the bunches rather small, it is true, and the berries not extraordinary for size; but Mr. Niven told us he found comparatively few would give the price for extra fine fruit; and that he could make much more money out of the heavy crop of smaller bunches. When a better taste prevailed he could meet it by taking half his present crop.

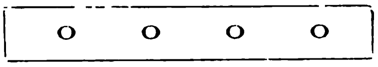
Sectional Lines of Mr. Niven's new Form of Span-roofed Houses.



The other glass chiefly worthy of notice are the two houses standing north and south near the walk previously alluded to. They are exceedingly well finished, very elegant, and we would rather not state the economical sum they cost. It was Mr. Niven's design to send a paper on these to some learned Society, such as the British Association, and, therefore, our readers must feel all the more obliged to him for consenting to make them the first judges of this new mode of glass-roofing. He states, "In reply to your note, I send you annexed the exact sectional lines of my new form of houses, the angled form admitting in the course of the day the rays of light and heat to act more or less rectangularly upon their respective side and roof surface. The rest I may leave to you, who have seen them in operation. Only this I may add, that my principal object in the contriving of these structures has been economy of space and capital, and instead of expensive, one-sided glass-covered walls, to have them extended, fruit or plant-house promenades, with every superficial foot of internal surface usefully occupied or available, and so finished as to be equally adapted either to the pleasure ground or the general garden."

Mr. Niven's drawing speaks for itself. There can be no question of the direct light thrown into such houses. A few things may be stated as explanatory. There was no heating of the houses when we were there. One house was devoted chiefly to Peaches, and the other chiefly to Vines. It was thought that the Vines at least would be none the worse of a little fire heat, and if both were heated a little, they would furnish storehouses for many things in winter. The houses being built on the slope of the ground, will be heated more easily than if on the dead level. A furnace, an Arnott's stove, &c., placed at the lower end, would render such a house safe, as the cold air would be drawn along the pathway to the stove, and the heated air pass along the roof to the other end. We presume the pipes on the lower lesser bed next the pathway are for heating-pipes, and instead of being covered with plunging material as shown, could be exposed when most heat was wanted. Mr. Niven was doing more in these houses than he has even represented in the drawing. The plants at the side of the path were dwarfer, but in one house the side lines of the higher bed were filled with bush pyramidal Vines, looking the very picture of health and compactness, and by stopping, though the bunches of laterals had green leaves enough, the two or three backmost buds on the shoots of the season were plump and brown. In addition to these, however, there was another Vine trained espalier fashion near the outside, which was also looking well. A similar plan was followed in the Peach-house. The bush or pyramidal trees were planted out on the high bed next the path, and another line to be trained trellis fashion near the outsides, but the shoots far apart, and these to be furnished with spurs, and kept to spurs instead of young shoots by constant nipping back in summer. So that, in fact, by not allowing these side trees to rise too high, Mr. Niven was actually doing much more in these houses than he has represented in the drawing. Of course, he knows all about root-pruning or re-planting, when a tree threatens to want too much room from over-luxuriance. We have no doubt these houses will produce a great quantity of fruit, and will be a fine promenade, especially as the fruit gets ripe.

Two or three more things should be noticed. The whole roof is fixed with the exception of two or three moveable squares in the middle of the 120-feet length. Of course, the angular space above the doors in each end, and even the doors themselves, are open in very hot days. The massive brick pillars at the ends exist, as far as we recollect, only there; but lesser ones of 9 inches, we think, are placed every 10 feet or 12 feet, and on these the plate is fixed, thus leaving the outside border and inside with free access to each other. The mode of giving air at the sides is also peculiar. The sides consist of two boards, an inner and an outer board. The inner one is fixed, but with oval holes cut in it—say 2 feet by 7 inches, and an equal space left between each opening. Thus—



The outer board is made to slide in a groove top and bottom, and openings of a similar size made in it, but the openings in the outer board will go against the close part in the inner board. When, therefore, you pull the outer board along the grooves, you may give an inch of air at each of these openings, or pull far enough to open the whole space, by having the openings of both boards flush with each other. By this mode an extra board is wanted on each side, but the expense and the bother of hinges, and catches, and handles are avoided.

Before leaving speaking of fruit, we must notice a Pear tree on the east and south side of the cottage, having forty branches and as many different kinds of Pears ripening in succession, and in common years furnishing a good supply for a moderate family. This year the supply was below the average, though there were some fine fruit. An essay on such Pear-growing was read by Mr. Niven before the British Association in 1858.

We have mentioned no ornamental trees; but we thought the Weeping Willows more handsome than usual. And speaking of the Willow leads us to say that Mr. Niven has large quarters of all the best Willows as stools, and especially the packthread Willow, the best of all for economical purposes; and all, and especially the latter, in the greatest luxuriance. Strange that so much should be paid to foreigners for Willows when they could be such a remunerative crop at home.

We find, however, that we have gossipped so long, that we must leave perhaps the best of the tale untold—about vegetables, worth the attention of young gardeners going some distance to see. We saw little of summer vegetables but Carrots, Parsnips, Turnips, and especially Asparagus, Sea-kale, and Rhubarb—acres and acres of the latter were fine. The great secret of all is deep digging, heavy dunging, and abundance of rich water. A large clothes-washing establishment stands even a little higher than the farm, connected with a female religious order; and the rich liquid from such a large place, instead of being a nuisance as formerly, is run into tanks on the farm, and, by means of moveable pumps and moveable water-troughs, is made to water and irrigate those crops that can take in all such strong food, and even look out for more. Whole quarters of Rhubarb had the rows enclosed with boards at the sides, and two or three-feet boards put across the top, ere long with or without heating material at the sides; merely from preventing the heat of the earth from freely escaping is sufficient to bring it early to such maturity as to fit it for the market. Large quantities of Sea-kale are whipped up, tied into dish-bundles, and after being a certain time in a warm dark place, are sent to tickle the appetite of the good people in Dublin.

In leaving this interesting place, we could not help wishing that the worthy proprietor might live many, many more years, to inculcate prudence, forethought, activity, industry, and honest thrift, by the most successful of all teaching—example; to impress on still many more pupils the necessity of self-denial, self-control, self-instruction, and thorough fidelity as the first necessary steps to lasting social advancement; to show them the importance of the great Christian principles of moral obligation for regulating their conduct in life; and, in fine, by his taste for and the love of the beautiful, to be the means of diffusing a still more ripening and elevating influence over the land of his adoption.

R. FISH.

MODE OF STRIKING CUTTINGS—DIVIDING AGAPANTHUS UMBELLATUS.

[illegible] the 1st ult., is a suggestion of your correspondent Mr. B[illegible]on, of a novel mode of striking cuttings by the assistance of warm air confined between the edges of a tube set upright on the ground, and a flower-pot dropped into it just fitting at the rim; the escape of air being prevented by the use of cement, or of putty.

[illegible] there would be some unc[illegible]ainty in these articles remain[illegible] [illegible]

suggest that a potter might make the article complete and air-tight in itself, excepting the hole at the bottom of the pot, which I presume would be required.

I have a fine Agapanthus umbellatus just gone out of bloom; the roots have burst the pot. I am informed by Loudon and others that the plants may be increased by dividing the roots, but the season for that operation is not mentioned; for the present I have placed the plant in a pot a trifle larger, 12 inches diameter.—Z. A.

[The double pot all in one piece, as here suggested, would answer very well; but in large establishments nothing of the kind would be so handy as common pots, and upright or bulb pots, the upright ones to be outside, and to secure the space between the edges with a bit of common clay. Then, when the pots were not in this use they would be free for common work. As yet Mr. Beaton has used only the common kinds of pots and they answer perfectly. The system is very good indeed.

The very end of April or early in May is the best time to divide a large plant of Agapanthus umbellatus, the blue African Lily—a severe work it is too—all the roots must be cut through the ball to get the divisions.]

INSECTS ON FERNS—SOIL FOR PRIMULA FARINOSA.

WILL you please to tell me how to destroy insects on Ferns? I found a few on mine lately, and smoked them with aphis pastils. The result was that all the young fronds were killed. The plants, however, were not otherwise hurt.

"W.," at page 148, will find nothing so good as cocoa-nut refuse for Primula farinosa—indeed, it is as excellent for all bog plants as for Ferns and bulbs.—R. W. E.

[Perhaps you placed the pastils too close to the Ferns. Fumigating with tobacco smoke, or syringing with Gishurst Compound will kill the aphides on Ferns. Thanks for the hint about British Wild Flowers.]

PEARS OF THIS YEAR.

WE never knew Pears much more deficient in quantity, and never better in quality, than they are this year. They are also remarkable for their large size.

Chaumontels from the Channel Islands, weighing from 24 to 34 ozs., are commonly to be bought at the London fruiterers; and they have been exhibited even an ounce or two over the highest of those weights. The heaviest specimen on record weighed 38 ozs. and was presented to the Queen in 1849.

Recently we tasted a seedling Pear from a wall in North Wales, the parent of which Pear was one of the old Bergamots. It weighed 24 ozs., and the raiser, a clergyman, says that he has grown them weighing 40 ozs.

At the Royal Horticultural Society's exhibition in November, Mr. Solomons exhibited some imported Pears, among which were Beurré Diels weighing 2 lbs. each, Catillacs weighing 2¾ lbs., and twelve Uvedale's St. Germain, weighing 39 lbs. These last-named, therefore, averaged 3¼ lbs. each, which prepares us for believing the following statements in the Californian newspapers.

The Largest Pear yet.—The Napa *Reporter* thus notices a Pear:—"California is noted for large vegetable growths. We have one now to chronicle in the shape of a Pear, which is remarkable for its size. It was raised by W. S. Jacks, of Napa City; is 18½ inches by 17¼ inches in circumference; weighs 4 lbs., and is of the kind called Pound Pear. It will be sent to the Eastern States for exhibition."

The *Sacramento Union* says:—

"*An Immense Pear.*—We received yesterday a Pear of the Duchesse d'Angoulême variety, the weight of which was 35¼ ozs. A citizen of Shasta, in forwarding it says, under date of September 25th:—'Benjamin Swasey sends you this day, through Wells, Fargo, & Co.'s Express, a Mammoth Pear of the Duchesse d'Angoulême variety, weighing 35¼ ounces. It is one only of the many fine productions of his well-known orchard, at the Lower Springs, about one mile and a half from Shasta. The tree that bore the above specimen is a dwarf, three years from the seed, and has matured in all, the present season, thirty-two P[illegible]rs, the twelve largest of which weighed 18 lbs. 10 ozs.; the [illegible]aining [illegible]wenty weighed 27¼ lbs. Swasey's orchard is happily [illegible] It is locate[illegible] about two miles from the Sacramento river, among the foot hills, and lies at an elevation of about 500 feet above the river. The soil is a red clayey loam.' "

"*A Profitable Apple Crop.*—There is an Apple orchard on Benson's ranch, in San Joaquin co., containing near 500 bearing trees six years old, and all loaded to their utmost capacity with splendid fruit. We observed trees containing the finest specimens of Rambo, Red-streak, Joanetting and Gloria Mundi fruit we ever saw in any orchard. These apples sell readily on the farm at eight cents per pound, or three dollars twenty-five cents per bushel. A number of the trees are bearing as much as six to eight bushels each, and the entire product of the orchard will be worth a small competency. When the home market is satisfied, the proprietors will take what is left to the mountain towns and to Washoe, whither there is a remunerative market. All the trees have been cultivated this year without any irrigation, in a sandy soil, the surface of which is about 10 feet above the level of the water of the river."—*Stockton Reporter.*

Large Plums.—The *Oregon Farmer* says :—"Mr. S. Luelling, of Milwaukie Nursery, laid on our table, three Plums of the Yellow Egg variety, which weighed, in the aggregate, 11 ozs. The largest of them weighed 4 ozs."

These details bring to our recollection that this is the season when certain parties prowl about the country, and victimise the too-readily credulous with all kinds of gardening prodigies, such as blue Dahlias, yellow Snowdrops, and Brobdignag fruits!

The last device in this way was managed by an American. Seeing some extraordinarily large Pears, of French growth, he bought a dozen—giving about 5*s.* each for them. He then bought five hundred maiden Pear trees, of some common variety, at 1*s.* 6*d.* each, proceeded to two country towns, exposed the gigantic Pears in a window fronting the high street, on the market day, stated that the trees bore Pears like those twelve he exhibited, and sold the whole of his trees for 5*s.* each.

NOTES ON MY HERBACEOUS GARDEN

MADE IN THE YEARS 1853-4, WITH A FEW ADDITIONS.

THE sum and substance of the following remarks is just this. They are notes made of such plants as I then grew in an herbaceous garden, devoted expressly to that class of plants which I had at that time under my care.

These notes were never intended to be submitted to the public, but were jotted down, sometimes in haste, expressly for my own use and guidance; but seeing that information is needed respecting any useful kinds of herbaceous plants, I copy a few of them which I think most deserving of notice, and submit them to the Editors of THE JOURNAL OF HORTICULTURE; and if they only add the smallest particle of assistance in putting down the present system of bedding, I shall deem myself abundantly rewarded.

NOTES OF BED NO 1, OF MEDIUM SIZE.

Filled at the beginning of October with nice strong plants of Delphinium formosum. These plants were obtained from old ones which were taken up the summer previously, and parted, and planted in the reserve garden. I have invariably found these to flower much stronger than seedlings.

Round the sides of the bed were Crocuses, Tulips, &c., to add a gay appearance in early spring. Some now-a-days prefer to peg down the Delphinium, but I like to see it enjoying its own natural habit, although, by following the latter course, it requires some support when in exposed situations.

The last week in April brings with it a good show of flower from the Crocuses; the Tulips are fast pushing up their flower-heads, and the Delphiniums are making good progress, with every prospect of a fine show of flower. This I consider mainly to be attributed to the early autumn planting—a decided advantage, certainly, and when practicable should never be lost sight of in the cultivation of most kinds of herbaceous plants. At the close of May we have the Delphiniums in all their beauty, and very worthy objects of much attraction.

Six weeks later, and the beauty of the Delphiniums being well nigh gone, I begin to prepare them at once for a change of quarters—that of the reserve garden. Here they will undergo precisely the same treatment as last year; parting at the roots, shading, and frequent waterings are all they require to make them good plants for the coming autumn.

The bed now is forked over, not too deeply, as it is likely at this season to suffer from drought; and on the first dull or cloudy day I will bring from the reserve garden sufficient plants to fill it of the Rudbeckia pulcherrima (I cannot vouch for the accuracy of the second name). It was a variety growing about 2 feet high. These have been standing in patches about 8 inches over, and are now just pushing their flower-stalks, and will remove without experiencing any serious check, and will from this time produce an abundant display of flower till frost makes its appearance in autumn.

The above may be considered a history of an herbaceous-bed and its occupants for a year, and will show the reader what in an ordinary system has been done. What might be accomplished if a regular system was laid down has yet to be seen, but can only be attained by a zealous advocate of the subject he is handling. Objections and stumblingblocks there are in the way of any one who dares to bring about a rival against our present bedding system, but not one is there but what will eventually be overcome.

[We hope our nameless correspondent will continue to furnish us with more of his practical notes, but we do not comprehend why he wages a war of extermination against the bedding system. He reminds us of the crusty old gentleman who preferred a grey pouey to one of any other colour, and wished especially that all blacks and chestnuts should be exterminated. Now, though our correspondent likes his hobby above all others, why cannot he let others ride theirs in peace and quietude, though of quite a different colour?—EDS. J. OF H.]

HEATING A VINERY—CARE REQUIRED IN BRUSHING OVER BUDS.

I HAVE a fruit-house, span-roofed, 36 feet by 28 feet, the centre of which is a raised border 14 feet wide, 2 feet higher than the surrounding borders. The raised border is planted with four rows of Vines trained to upright rods, as in southern France, chiefly Black Hamburghs. The rest of the house contains Peaches and Apricots in pots.

Through the middle of the raised border runs a sunk but exposed flue (continued into an orchard-house 37 feet by 14 feet, span-roofed, 9 feet high, adjoining the vinery and on the same level), in all 60 feet long, two brick on edge deep, double slate covers, 7 inch inside measure. The furnace is 18 inches deep and 12 wide and high, and I find it will raise the house about 10° above the outside temperature in dull cold weather. Now, as this (Yorkshire), is a very rainy sunless climate, I doubt whether I shall be able with such heating power to ripen my Grapes in good time, as from October the sun is very low here; and therefore the earlier my Grapes are ripe the better, I presume, will be their flavour. What, then, will be the cheapest way of giving additional heat to such a house? I have thought of three plans—one, to run a single 1¼-inch pipe at 1*s.* 6*d.*, or three-quarter-inch at 1*s.* per yard, round the Vine-borders, having two or three bends across the furnace-top inside as boiler. This would cost about (for 30 yards and fixing) £2 10*s.* or £2. How many degrees of heat do you think it would add to the vineyard? The other two methods would be enlarging the furnace to 2 feet by 18 inches; or a brick Arnott's stove, on one side of the vinery and below the raised border, which would, of course, heat one side unduly. Cost I cannot tell. When should heat begin to be used? I think as soon as the Apricots set.—IGNORAMUS.

P.S.—Will you caution beginners in painting their fruit trees with soap, sulphur, Gishurst, &c., in winter not to apply the brush against the grain, or they may injure the fine scales which shield and cover the young blossom-buds?

[Unless you have openings to let the heat out into the atmosphere of the house, we are rather surprised that your sunk flue if all covered over does raise the house 10° in cold weather, though it would do that easily and more if exposed. Perhaps, however, we read the matter wrong, as our eyes even with spectacles can scarcely decipher the very minute interlining. There was given the very information you desiderate about flues not long ago in articles on "Forcing," or we are mistaken as to our memory; which articles, we may state in answer to other inquirers, will be resumed as soon as some other matters more pressing are cleared away. We think that with the power you state there will be little difficulty in ripening the Grapes, provided you have openings enough to let out the heat. To do anything like force such a house you would require such a flue, and even a brick deeper, to go right round the house. We have not much faith in your 1¼-inch pipes, unless they were made strong so as to sustain pressure, and then they would be much more expensive. In such small pipes, too, even when coiled as you state, there is a difficulty lest they get broken in the fireplace; and when so small, too, and much fire used, they soon wear out. On the plan you propose, we would prefer having pipes at least of 2 inches, or rather of 3 inches in diameter, and have a syphon bend to place in the fireplace, so placed that one side would be at the top for the flow-pipe, and the other near the bottom to join the return-pipe to ∩. Such a syphon bend, 3 inches in diameter, would cost under 5*s.*, and similar pipes 2*s.* per yard. Two-inch pipes would cost 1*s.* 3*d.* per yard, and that would be better than lesser pipes. Were we in our correspondent's position, however, we would so alter our furnace, if it needed any, as to let the flue alone, and set on it a small saddle-back or elliptic boiler. One of the latter could be obtained from 24*s.* to 32*s.*, the former being 18 inches by 18 inches. Or a small boiler similar to those used by Mr. Rivers, and made in that neighbourhood, could be easily set on, and one pipe to go round, would do all that would be required. Telling how many degrees that would heat a house would be very fallacious. It would then do no more with three-inch pipes than keep out frost in such weather as we had last winter. In a barn of a house we have in our experience kept the house higher with 20° of frost out of doors, than we could do with even more fire when there was only 5° of frost, but a keen blustering wind blowing.

If we used Arnott's stoves we would have a good-sized one in the middle, all above ground, and the smoke-funnel through the roof, with a damper near home to regulate draught. This would be the cheapest of all, or a small one might be made to each end. The small boiler would be the neatest, easiest managed, and in a few years would prove also the most economical.

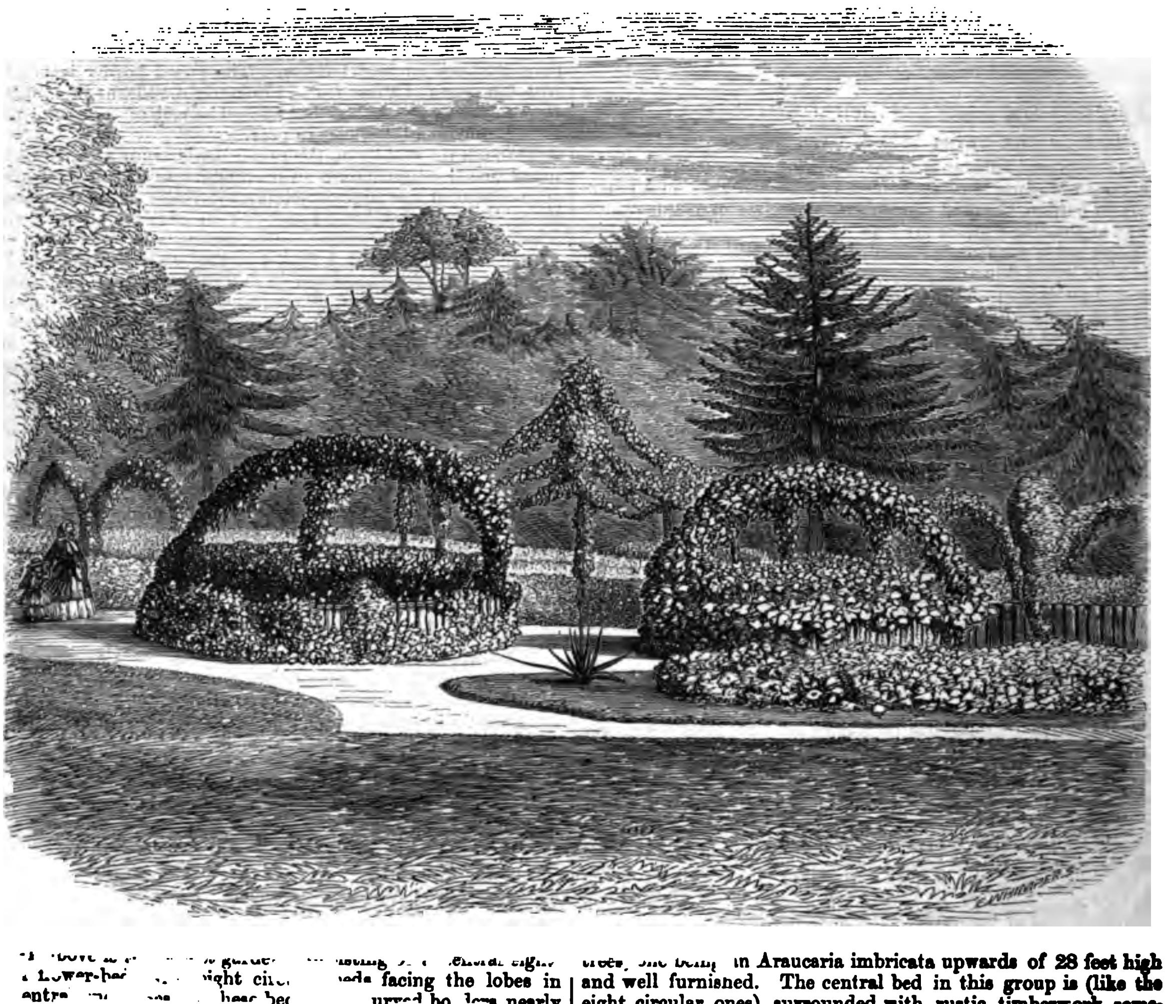
We have just thought that if you did not want the flue in the orchard-house in the autumn, you might put a damper in where the two houses join, and return the flue back again to the furnace, and have a chimney there. Soft burned drain-tiles—that is, not hard nor glazed, and cement joints would answer well, and they could be placed along the surface of the bed. In such a house we do not see why the flue should have been taken below the raised bed for the Vines in the first case, more especially as anything like forcing seems not to have been intended.

Many trees are injured by carelessness as you suggest.]

LINTON PARK,

THE SEAT OF LADY JULIA CORNWALLIS.

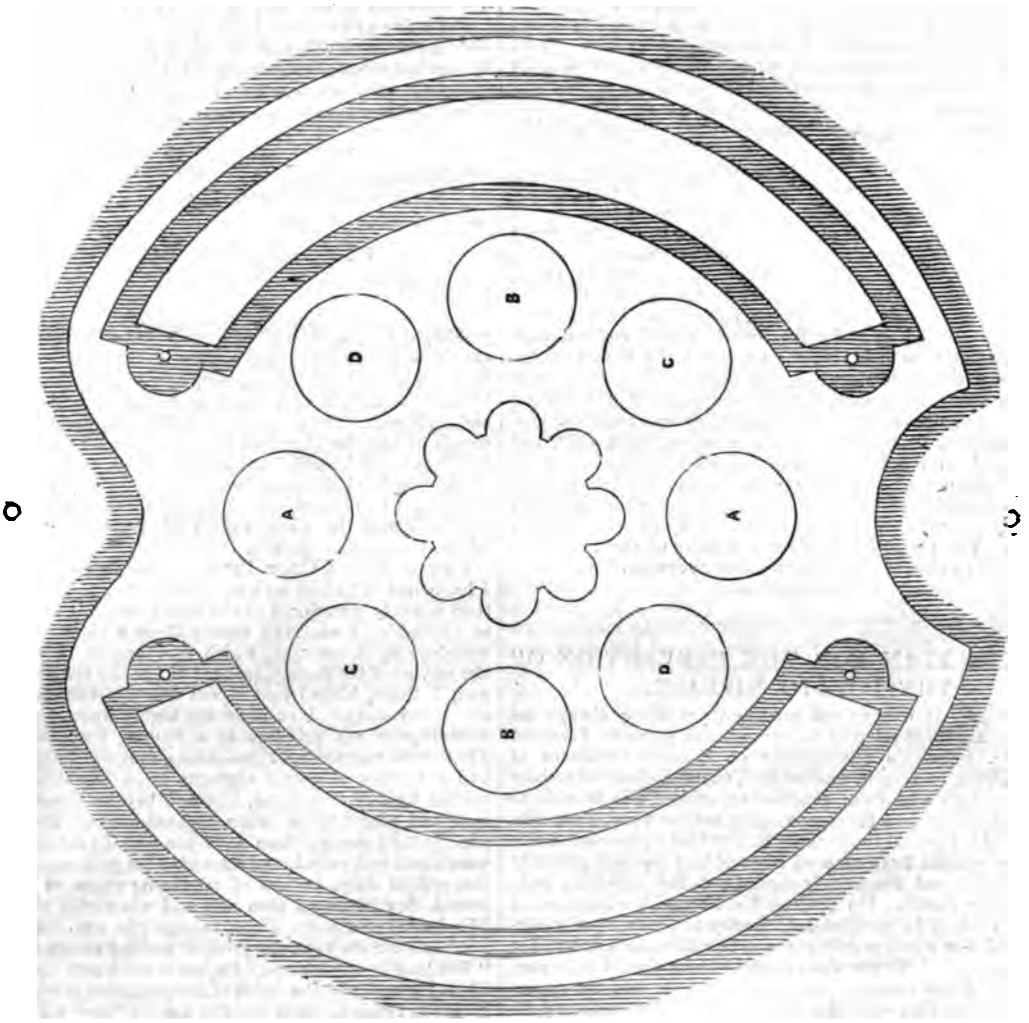
(*Continued from page* 188.)



[illegible] garden [illegible] eight [illegible] Lower-bed [illegible] eight circ[illegible] beds facing the lobes in [illegible] these bed[illegible] urved bo[illegible] nearly [illegible] important trees, one being an Araucaria imbricata upwards of 28 feet high and well furnished. The central bed in this group is (like the eight circular ones), surrounded with rustic timberwork somewhat under [illegible] feet high, and in the recesses where the lobes meet, pillars about 9 feet high are covered with climbing Roses, and festooned together with chains covered in the same way. These are also all united in like manner to a central pillar taller than the other, as is shown in the engraving; the basket-beds having each a bow over them covered also with creepers, and well filled with flowers, were in reality baskets in the true sense of the word. But as it is difficult to give a just description of such things by prospective only, we annex a ground plan as well, with the plants with which it was planted.

It is proper to explain that these basket-beds are surrounded by white-shell gravel, the rustic work being covered with Ivy. The circles were about 12 feet in diameter. The side borders were about 7 feet wide, and were not raised. Strips of grass 2 feet wide surround these borders, the ends terminating in tidy plants of Yucca gloriosa. We observed that the edgings of these grass frameworks, as they may be called, were edged with brick laid diagonally, as shown in a previous Number of THE JOURNAL OF HORTICULTURE, forming a boundary line which could not by any ordinary amount of unskilful management get out of order. The same substantial way of securing an edging is adopted in some of the other gardens, and is well worth being extensively so elsewhere; as the brick, without showing more, perhaps, than an inch of its edge on the walk or border side, presents a formidable barrier to the hoe, spade, barrow, or roller. A white-shell walk also separates the borders from the outer grass plot by which the whole is surrounded.

The planting of the eight circular beds has been done the past summer by having four of them, A A and B B, divided into quarters by two lines crossing each bed at right angles to each other; the four other beds, C C and D D, in concentric rings or circles. And as the planting of these beds may be of interest to our readers, we give them with some critical remarks by one well versed in such matters.



The central bed, which was much shaded with the climbing Roses, was edged with Alyssum variegatum; and from each recess a straight line of the same was stretched to the centre, thus dividing the bed into eight wedge-shaped panels. These panels were planted with Gazania splendens or G. rigens, and towards the latter end of the season looked very well. The Gazanias, however, hardly kept pace with the Alyssum.

The baskets A A had an edging of Vinca elegantissima, a variegated Vinca, which overhung the Ivy and rustic work with good effect. Inside this Vinca was a ring of Perilla nankinensis, and two lines of the same divided the bed into four quadrants or panels, which were planted with Mangles' Variegated Geranium. The Perilla, by being pinched in to keep to the same height as the Geranium, looked remarkably well; and these beds looked well from the early part of June until November, and might be regarded as one of the most successful of the season.

Baskets B B.—Planted like the above, but plants different; the edge being a blue Anagallis, the inner ring and cross lines being Geranium Flower of the Day, and the quarters or panels Calceolaria Prince of Orange. In the early part of the season this looked very well; but after the middle of August there was not much flower on the Calceolaria, and the Anagallis was not showy enough to be repeated.

Baskets C C, planted in circles.—The centre (about 5 feet in diameter), Verbena Purple King; then a ring upwards of 2 feet wide of Calceolaria aurantia multiflora, and at the outside an edging of Tropæolum elegans, which, like the Vinca, overhung the edges, and the whole flowered, and were a complete mass of colour in the middle of the season, the Tropæolum continuing to the beginning of November.

Baskets D D, planted in the same manner as C C.—The centre being Calceolaria amplexicaulis; then a ring of Geranium Lady Holmesdale, a pink-flowered variety; and an edging of a yellow Tropæolum, which at one time was exceedingly rich, but, going too much to seed, was cut down in August, and flowered again in October. This Calceolaria is, however, late, and though indispensable in the flower garden, it is not one of the class which can be reckoned on as doing good service for five months, or longer, consecutively, which some of the varieties do.

The outer borders were planted entirely with Geraniums, which is the reason they were so sparingly used in the basket-beds. The borders, being nearly 7 feet wide, were planted in six rows; the two centre rows were of variegated Geranium with white leaves, then one row of a plain or horseshoe-leaved Scarlet, and the outer rows of Geranium Golden Chain, thus giving four rows of variegated Geranium and two rows of plain ones to each border. The central line of one of the borders was Geranium Bijou, with Geranium Baron Hugel between it and Golden Chain. Most people admired this; but certainly the flowers of Baron Hugel were dull. The other border had Geranium Alma for a centre, and between that and Golden Chain was Geranium Judy—a dwarf, deep rose-coloured variety with plain leaves, which, on the whole, looked better than Baron Hugel. The beds being some little distance apart, the slight difference in thus planting them was of no importance.

Not far removed from the basket garden is a fountain with a bason 20 feet in diameter, surrounded by a walk, and that also enclosed by a dome-shaped verandah half open. This dome is 36 feet in diameter, and the framework is well covered with Roses. In the distance is seen the mansion; the basket garden being also in the same direction, but nearer. This fountain is in the centre of a cross walk, having a number of flights of steps ending on the upper side in a conservatory and Dutch or geometrical garden, from whence there is an excellent view, but still better from the lower end, where, after descending some half-dozen flights of steps, we come upon another terrace-walk still considerably elevated above the ground to the south of it, and the view here being less interrupted with trees is beautiful. The park with a well-chosen piece of water stretching out seems to mingle with the adjoining country.

(*To be continued.*)

SHORTT'S PLAN FOR THE PREVENTION OF THE POTATO DISEASE.

ALTHOUGH not a practical gardener, yet being always interested in anything relating to agricultural pursuits, I cannot allow Mr. Pownall's observations on Shortt's treatment of Potato culture to remain unanswered, though, doubtless, there are many others who from practical experience will be able to handle the subject in a far more weighty and convincing manner.

Before Mr. Pownall thus hastily and publicly condemned this system, he should have assured himself that he had properly comprehended and thoroughly carried out the directions published by Mr. Shortt. On reading Mr. Pownall's strictures, it was very evident to me that both master and man equally misunderstood the whole matter; and it is not to be wondered at that a failure in both the plans tried by them should have been the result. Since forming this opinion I have had an opportunity of conversing with Mr. Milford, who fully confirmed me in the foregoing conclusion. It is surprising that any one can read directions so very plainly and lucidly expressed, and so completely mistake their meaning.

Mr. Milford most fully confirms all that his gardener has stated with regard to the prevention of disease by his plan. Not only on his own ground at Coaver has a fine crop been realised, with hardly a vestige of the disease, but Mr. Milford states that in Norfolk, from which county he has lately returned, the most thorough and undoubted success has attended the extensive [illegible] of the Potato on this system. My father, Mr. R. W. [illegible] Shillingford, near this city, has adopted it this last [illegible] and reports favourably with respect to it. In the plot where the haulms were laid down and covered, there was very little disease to be found; but in another piece of ground close adjoining in the same garden, where the old system was followed, a large proportion of the crop was severely affected.—S. BEVAN FOX, *Exeter*.

Since sending off the above remarks, Mr. Shortt has called on me, and from him I learn that I have, to a certain extent, done Mr. Sanday an injustice, in ascribing to him a complete misunderstanding of the reading of the published directions. The haulm is laid evenly between and across the side of each ridge; the earth taken from the furrow is placed on the ridge, and very nearly, but not quite, covers the haulm. The tops will soon turn up to the light, and in a few days will be about half covered, and will in this state, as well as the tubers, continue to grow. If the haulm is completely covered, or if the tops are twisted together like haybands, and then covered, the disease may be arrested, but all growth in the tubers is at an end. If I understand it aright, the principle is, that the disease is not washed down among the roots by rain or heavy dews, but that wet is thrown off the ridge by the earth-covering to the haulm.

It has been thus carried out most successfully by a friend of Mr. Milford's in Norfolk for many years. The discovery was an accidental one. In making a drain by the side of a garden, the earth was thrown out over a piece of ground planted with Potatoes, the ridges of which run parallel with the new cutting. When the owner of the garden took up his crop, he found to his astonishment that all his ridges so far as the earth had been thrown out were free from disease; while all that had not been so covered were quite rotten.

POMOLOGICAL GLEANINGS.

OCTOBER RASPBERRIES—About the first week in November last I paid a visit to a friend living near Guildford, and when looking over his kitchen garden I observed two rows of Raspberries, one on each side of a path about 10 yards in length. One row was the October Yellow, and the other the October Red. The soil of the garden, which is at the foot of St. Catherine's Hill, is of a light sandy nature, and its site warm and sheltered. The gardener said, that during the whole of the month of October they had been loaded with fruit, and that he had "gathered bushels" from them, which owing to the fineness of the weather had been of excellent flavour. These Raspberries should not be planted in cool districts. The south and east of England, and the warm valleys of Worcestershire seem best adapted for them.—RUBUS.

CABOOL GREEN GAGE PLUM.—Some four or five years since I happened to be looking over the novelties in trees and shrubs, then recently introduced at the Horticultural Society's Gardens at Chiswick. I observed among them a vigorous-growing but wild-looking Plum tree, which Mr. Gordon, who was then in the service of the Society, pointed out as the Cabool Green Gage, and, I think, hinted that it was an old favourite Plum in its aboriginal state. I at once felt highly interested, and taking advantage of my privilege as a Fellow, procured some buds. These were inserted on Plum-stocks, and the following season I had a number of young vigorous trees. Wishing strongly to see the fruit of this Plum, I potted two or three of my young trees and placed them in my orchard-house. The second year after potting one of them gave me a full crop of fruit. They were small and round, and interested me greatly. Alas! towards the end of July, instead of remaining green as I hoped they would, they began to turn red, and when ripe proved to be a Mirobalon, or Cherry Plum, enlarged in size. The tree is remarkable for its vigorous growth, making shoots from 7 feet to 9 feet long in one season. Its leaves are larger than those of the Cherry Plum, and the habit of the tree more erect and vigorous. It may, I think, be called the Cabool Cherry Plum, and as it seems very hardy it may prove a valuable culinary variety.—THOS. RIVERS.

TREATMENT OF OFFSETS OF GLADIOLUS BULBS.

UPON taking up the roots of Gladiolus gandavensis I find a large number of small bulbs, about the size of wheat grains, looking quite white and naked; also a few larger with an [illegible] sort of look. How shall I deal with them? I feel inclined to rub them off and plant at once; if successful my increase will be literally fortyfold. One of Gladiolus floribundus that I grew merely to make its acquaintance I find shooting from the [illegible] bulbs, so I have potted it. H. B.

In October, 1834, [illegible] a four-hundredfold produce, [illegible] yours, of Gladiolus psittacinus, which was selling in 1833 at 10*s.* 6*d.* the root. Psittacinus in strong loamy soil, or in a Vine-border in fact, produced five or six times more offset bulbs than any other kind that we know. At another lifting we had a quart-pot full of small Gladiolus offsets not larger than rice seeds, and two pecks of the next size or sizes, for we only had two sieves to pass them through for sizing the sorts; and for fifteen years we had more or less of such fry to deal with. And the best plan we ever found was to part all the small bulbs from the large ones after they were lifted ten days, more or less, and dried in open shreds. Then the large bulbs were rubbed, cleaned, and put into paper bags; the small fry were put through different sieves to sort them into proper sizes, and to separate the soil and dust from them. Then each size was bagged in paper, and so kept till the beginning of April; then they were planted out by the thousands, in drills exactly like sowing dwarf Peas, sometimes on a Vine and Peach-border and sometimes in the open quarters of the kitchen garden. No better plan than that, as far as we know, has been hit upon since.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, if the heat of the beds should decline, a slight lining may be added; but care must be taken that it does not heat violently. *Broccoli*, keep it free from dead leaves, as, after frost, they seriously injure the plants by causing them to rot. *Cauliflowers*, give air freely to plants under glass. *Celery*, take advantage of the first fine dry day that occurs to earth up any rows that may have overgrown the previous soiling, and be prepared to protect the ridges in case of severe frost. *Lettuce*, give air freely to the plants under glass, as advised for Cauliflowers. The glass should be merely used to exclude frost and to throw off rains, as the plants will succeed all the better in the spring for being kept hardy and stocky during the winter. To be kept free from dead leaves. *Parsnips*, where they have not yet been taken up, they should be left in the ground no longer, as they are not in the slightest degree benefited by remaining there, and should severe frost set in there would be a difficulty in getting them up. *Turnips*, on the first appearance of severe frost it is advisable to get some under cover. They may be laid in sand after the tops are cut off. Look over root stores occasionally to see that nothing is going wrong. As we recommended last week, take advantage of frosty weather to get manure wheeled on spare ground. Trench, dig, and ridge every spare inch of ground whenever the weather will permit these operations to be advantageously performed. This is to be done more especially in gardens where the soil is of a clayey nature.

FLOWER GARDEN.

Continue planting in favourable weather shrubs, trees, Roses and Rose-stocks for future budding. Prune and nail, or tie, all climbers on walls, trellises, pillars, &c.

FRUIT GARDEN.

See that standard and other trees, which have been recently moved or root-pruned, are firmly secured against injury from winds, and also get any root-pruning or transplanting remaining to be done this season executed as soon as possible. The roots of all newly-planted trees to be secured from the effects of severe weather by mulching. Fruit trees are injured by the accumulation of moss and lichen on their branches: when the hand cannot reach it a dusting of lime will effect its destruction. Strawberries and all fruit trees in pots to be protected from frost. Take every opportunity of pushing forward pruning and nailing. Look over the fruit in the fruit-room, and remove all that are not sound. In the absence of frost, old walls may be pointed and limewashed.

STOVE.

A cautious application of fire heat must still be observed here. Keep the temperature rather low than otherwise, for fear of exciting a premature growth. Cleanliness and a judicious use of the watering-pot should be strictly attended to. A small portion of air may be advantageously admitted on fine days, and will greatly assist in purifying the atmosphere of the house. Many stove plants with large fleshy roots—such as the different varieties of Ipomœas—should now be allowed to go nearly or quite dry. Great caution is necessary to provide against drip. Many Orchids here will make late growth in spite of system; and these, although not encouraged by improper temperatures, will be liable to rot if condensed vapour or drip be permitted to lodge in them. The great object should be to aim at that kind of routine management which will serve to consolidate the growth already made, and to develope the blossoms of the late-flowering sorts in a proper way.

GREENHOUSE AND CONSERVATORY.

Damp and mildew are the great enemies to be guarded against here in the present state of the weather. Remove the early Chrysanthemums as soon as they are past their best, as the plants have but a very shabby appearance when the beauty of the bloom is over. Now is the time either to order some of the new and good sorts, or to select some of the best and most useful of your own stock, as it is better to grow duplicates of the really good kinds than to retain such as are but indifferent merely for the sake of having a long list of names. The leaves of Camellias, Oranges, &c., are liable to a dark scum, which is supposed to be a fungus. This should be cleaned away with a sponge at this period, especially as the chief interest in greenhouse plants depends in a great measure on their cleanliness. Take care during frosty weather that the Heaths do not become too dry on a sudden, or they are sure to suffer, if not killed outright. The best preventive is to be rather cautious in the application of fire heat; external coverings, where they can be applied, economise fuel and preserve the plants in a dormant state. See that the early-blooming Cinerarias have the lightest place in the house close to the glass; crowding is very prejudicial to this plant. Let plants of Eranthemum pulchellum coming into bloom have abundance of water and a warm situation. The Veltheimias, Tritonias, Stenorhynchus speciosus, Lachenalias, &c., are delightful winter things. Do not water the Pelargoniums until they are thoroughly dry.

FORCING-PIT.

This structure must be kept fully occupied with all the different plants usually employed in forcing for the decoration of the conservatory or drawing-room. In successfully forcing many plants the application of bottom heat will be found indispensable. The great secret in the affair, if the heat be wholly composed of fermenting materials, is to keep down damp and mouldiness by an almost constant ventilation. Those who possess tank-houses or pits will pursue a somewhat different process; such will scarcely need my advice.

PITS AND FRAMES.

As the present is a very trying season for the inmates of these structures, every advantage must be taken of mild days to give air freely, and unless in very dense foggy weather, a little may be given every day when the temperature is above freezing. Little or no water will be necessary here for some time to come, as the plants will be all the better for being kept rather dry at the root, but strong healthy plants will probably require water occasionally to prevent the balls getting too dry; and when water is indispensably necessary a dry morning should be selected, if possible, for doing so and for ventilation given during the day. See that the frames are well banked up so as to be proof against severe frost, and do not neglect covering up securely at night.

W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

In frosty mornings wheeled fresh turfy soil and leaf mould, to give a small barrowload of top-dressing to fruit trees planted on mounds last season. Wheeled rubbish-heap to bare parts of kitchen ground preparatory to digging and trenching. Also manured flower-beds as opportunity offered. Forked up slightly among Strawberry-beds, alike to allow the rains to pass freely and to present a rough surface to the frost, before we find time to place some littery manure between the rows, and a dressing of burned earth and charred refuse over and round the crowns; as, when frost is prejudicial, it generally assails most any exposed necks that may be below the crowns. Got rid of all haulm of Peas, Scarlet Runners, all stumps of Cabbages, Cauliflowers, &c., that have done their work, and withered leaves from Scotch Kale, Brussels Sprouts, &c., that the garden may have no unpleasant smell from decaying vegetables; and took all the latter to the rubbish-heap, where they will be allowed to rot and decay, covered over with rubbish from potting-bench, &c. Trapped and poisoned mice that were threatening to make breakfasts of forward Cauliflowers under protection now ready for use. Sowed some Mazagan Beans and Sangster's Pea; and in pots and in rows where they can receive a little protection, Tom Thumb

Pea, having found them serviceable last season. Cleared away the last crop of *Dwarf Kidney Beans* sown in a cold earth pit, and covered with sashes after the middle of October: these served us for a supply to the third week in November. We used to have these vegetables during all the winter, but now we go without for two or three months, and let the coal-heap have a comparative rest. The same as respects Cucumbers, as it was found that hardly one touched them during the winter months, and to have them a place had to be heated for what in reality was not wanted. That is no reason, however, why such things should not be had by those who like them and want them, and do not mind the expense of fuel and attendance at this dull season of the year. Besides, I found that even in the case of Dwarf Kidney Beans, when presented almost constantly at the table, they were not partaken of with the same relish as when there were breaks between the times they were most plentiful in. At this season, however, I would remind beginners not to use too large pots for their Beans. I used to get most at this period from 24's and 16's, and with six Beans or so in a pot. After the middle of February and onwards 16 and 12-pots will answer best, and about three plants in a pot. *Cucumbers*, too, at this season should neither bear heavily nor have the fruit swelled to a large size, if it is desired to have the plants bear freely after the new year and onwards for several months. Heavy bearing in the dark months soon weakens the plants, and if weakened then it is difficult to recover them.

FRUITS.

The fruit being cut, removed some *Vines* from vinery to introduce other sorts, taking away the old soil as far as could be done without much hurting neighbouring Vines, and filling up the spaces with fresh turfy loam, lime rubbish, a few bones, and a little leaf mould, and turning out the young plants at once, breaking the balls and spreading out the roots carefully and high enough to permit of sinking. Find that the extra heavy crops for twelve or ten years are telling on the Vines, as the wood is smaller than usual, though hard as a piece of Oak; and will, therefore, cut more close, and crop less next season. Filled a small Vine-pit with *Strawberries* in 48-pots, the bulk Black Prince, and the rest Keens' Seedling, setting them on boards; the Vines being laid down on the surface of the soil in a bundle until they begin to break, when the Strawberries must be thinned out to give them room. The Strawberry plants had most of the large outside boxes removed, the surface stirred with a pointed stick, the loose soil thrown off, and a top-dressing given of rich loam and dung with a little soot; any pot that was very dry was watered before the top-dressing was given. In summer and early autumn we should not think of removing one of these larger outside leaves, as then there was a reciprocal beneficial influence going on between the roots and the leaves; but, now, if kept on the most of these leaves would ultimately shrivel up or wither, and be removed in the long run; whilst before that takes place they would be kept in a languid vitality by the forces of the root being partly directed to that object, instead of being concentrated in throwing up a vigorous stalk of flower-buds, and a fresh batch of leaves to keep them in company, and to organise sap suitable for both. We have tried both ways repeatedly, putting in plants with all their lower leaves remaining, though spotted and showing signs of decay, and removing the most of them, leaving only a nice tuft of freshish ones in the centre; and in every case we found the last do best. These pots and Vines average at present from 45° to 50°. The pit is just as well filled with pots as if there were not a Vine in it.

FORCING.

Lots of Rhubarb and Sea-kale have also been put in the Mushroom-house, and a bed formed chiefly of rubbish from the flower-beds, and surmounted by from 1 foot to 18 inches f tree leaves; and several inches of soil on the top have been illed with Asparagus roots brought from the open ground; it is ust late enough to have it nice before Christmas, but we could ot get any leaves in heat any sooner owing to reasons mentoned the other week. Looked after mice in Radish-frame, nd stirred up the soil a little with the stick to keep the soil eet, and in unison with plenty of air to keep the young plants th short stiff necks instead of long ones. Want of manur [illegible] partly doing our beds in the *Mushroom-house* durin [illegible] which we would prefer, and just adding some a [illegible] ason before spawning when the heat was all righ [illegible] ake beds now, th [illegible] ung is apt to be too moist for shea [illegible] [illegible] mixing it with the dung, which when thrown into a heap dries it sufficiently—in fact, provided the dung is not too wet we hardly ever fail with Mushrooms, however heterogeneous the material we use. I detailed how nice a bed we had in summer, the bulk of which was formed of stubble, with a little short dung on the top. Could we get horse-droppings for what we want, we should prefer drying them by exposure, instead of heating them by throwing them into a heap. We have always found that the less these droppings are wasted by fermentation the longer will they produce good crops. Attended to covering, airing, potting, &c., as in previous weeks, getting forward outside work in all suitable weather.—R. F.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

WINTERING A PASSION-FLOWER—CUTTING DOWN CLIMBERS (*B. B.*).—There are many Passion-Flowers; some are stove plants, some are greenhouse plants, and two or three sorts of the blue Passion-Flower are all but hardy in most parts of England. Yours we take to be of the latter section, and the best way for it is to give it the winter treatment of a greenhouse, and free liberty in summer to grow in the open air, and always to be pruned at the end of October—and pruned very close indeed. All Passion-Flowers are altogether unfit subjects for dining, or any living-room cultivation, and as much so for cold pits or frames; or the more hardy kinds for pot culture at all. But, for a temporary makeshift, to keep a young Passion-Flower over one winter, the best treatment is to prune it quite close to the oldest wood at the end of the autumn, and to keep it half dry in a cold pit, where bedding plants would be safe till the end of the May next ensuing. Then to shake the ball of earth gently off and plant the Passion-Flower out against a south or west wall, and to shade it with a mat in the daytime for three weeks to keep the sun from it till the roots establish themselves in the soil. Then, to do it full justice, it ought to be watered once a-week the whole of that summer till the end of August, and in November following it ought to be cut down to within 1 foot of the ground, even if it had grown 40 feet long that first season. That is the whole secret and the turning-point in the management of Passion-Flowers, climbing Roses, Clematises, Jasmines, Honeysuckles, and all sorts of climbers whatsoever—including the Glycine of course. There is not one man in five hundred who can make up his mind to cut down a climber so close as that the first and the second season after planting, and that is the very reason why only one real good healthy climber can be met with among five hundred plants of them. Nevertheless, the law of Nature in the case of climbers is this—if you want a climber to cover a certain space in the shortest possible time you must cut it to the quick three years running. It sounds odd; but it is the truth for all that. The reasons for such treatment have been often explained in our pages.

INSECT DESTROYER (*A Subscriber*).—We do not know where Dupont's can be obtained. We have never seen it advertised.

WINTERING FUCHSIAS IN AN OUT-HOUSE (*A Constant Subscriber*).—The Fuchsias if at all damp and set on a stone or earth floor, and the pots covered over with moss or litter, will need no water until spring. If at all dry and set on a dry floor they will need a little water. They will keep best if dryish rather than damp: but they must not be dust dry, or the plants may die. The tops also must be protected from frost, if you do not mean to cut the plants down to the surface of the soil. One of the best modes to keep roots and tops in a cool out-house, is to set them as close together as they will go, with a partial pruning. Cover all round and over the pots with litter, and then throw a little hay all over them. A very little will secure them from frost if the place and the covering are dry. We have had them thus covered from November to March, and as then the buds begin to push, the plants require light.

VARIOUS (*An Amateur Lady Gardener*).—The best thing on your dry light soil would be to have your flower garden all on gravel, and to have the spaces not intended for walks in coloured gravels as at the new garden at South Kensington. The end of February will be quite time enough to plant Gladiolus brenchleyensis. We heard no more of "G. D.'s" Spergula. Clematis montana will suit your object better than Caprifolium japonicum, and if you stretched wires against the poles for the Clematis, you might train up the Ivy to any reasonable height. We have hid cottages that way not long since. By no means turf up to the fruit trees, they would do much better with no turf near them, but go on mulching them. Your plan for Violets and Primroses is capital; and there is not the smallest doubt about all your Roses, but in that soil get as many of them on their own roots as you can, and have nothing to do with Spergulas on it.

ook ON GARDENING (*J. M.*).—Buy "The Garden Manual." You can have ree by post from our office for twenty penny postage stamps.

ames OF PLANTS (*A Constant Reader*).—1, Selaginella denticulata; elaginella not recognised: 3, S. Martensii; 4, Kalosanthes, or Crassula [illegible] 5, Sedum [illegible] [illegible] Cineraria maritima; 7, Aloe, perhaps [illegible] scrap of arborescens; 8, Saxifraga sarmentosa. (*J. Smith*).—1, Pteris tremula; 2, insufficient, looks like a scrap of Lastræa tenericaulis (Polyp. trichodes); 3, Polystichum capense; 4, Nephrodium molle; 5, Asplenium flaccidum, var,; 6, Platyloma falcata. (*J. D., Dundee*).—1, Geum rivale; 2, Veronica chamædrys; 3, Hypericum pulchrum—so far as we can tell from such flowerless scraps. (*M. A. S.*).—It is Tussilago fragrans, Sweet-scented Coltsfoot, a native of Italy. It is sufficiently hardy to endure our winters, but then blooms early in the year and not at this season.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BIRMINGHAM POULTRY SHOW.

We now redeem our promise of reviewing the classes of this great Show.

Our first notes are for *Silver Grey Dorkings*. If there was ever any doubt as to the difficulty of breeding these birds, this Show may dispel it. We speak on good authority when we say there were not twelve really perfect cocks in these classes. Decidedly, Dorkings are not birds of feather, and it seemed hard that an otherwise noble bird should be disqualified for a few white spots on a black breast, but it was so. Mrs. Fergusson Blair headed the first class. We congratulate that lady on the success that rewarded her enterprise in sending so far to our great Show. Ladies Bagot and Sophia Des Vœux, with Messrs. Arnold, Drewry, and Cargey also succeeded in the difficult task of satisfying the Judges in these classes. Many birds might have figured in the general competition which followed, and which was headed by Mr. Potts, of Hoole Hall. Capt. Hornby took three prizes and a silver cup, Mr. Wakefield two, and the Hon. W. W. Vernon two. All these birds were perfect, and they speak well for the strains of these gentlemen who are everywhere successful. It must not be thought these were the only birds worthy of especial mention, many of the commended and highly commended were more than meritorious. The hens and pullets were excellent, especially those belonging to Lady Louisa Thynne and Captain Hornby. *White Dorkings* were very good. Capt. Townshend and Mrs. H. Fookes deserve especial mention.

The *Spanish* fowls were very good, but there were none equal to the birds shown formerly by Mr. Davies, or last year by Messrs. Rake and Teebay. We would not attribute this to lack of merit, so much as to late moulting in the old birds, and want of age in the young. We may here remark, there was abundant proof in every chicken class that the season has been a bad one for breeding. Messrs. Martin, Teebay, Hyde, Fowler, and Rodbard were the fortunate exhibitors. In the different classes fourteen deserved degrees of commendation.

The adult *Cochin-Chinas* formed a grand display. We hardly ever recollect so good a class. The successful strains of last year were again "to the point." In old and young, Messrs. Tomlinson and Stretch were first and second, while the third went to Mrs. H. Fookes and Mr. Kellaway. The hens and pullets were good but not numerous, their quality will be proved by the names of the successful, Miss Musgrove, Messrs. Felton, Stretch, and Statham. In the adult *Grouse* and *Partridge* birds, Mr. Peploe Cartwright took *all the prizes*. Mr. Tudman was again first in chickens, followed by Messrs. Stretch and Felton. These were excellent classes. All the *White Cochin* prizes were taken by Mr. Robert Chase, not because there was no competition, but from the merit of his birds.

We were glad to see the *Brahma Pootras* in force, and to observe that this useful breed is now thoroughly understood and appreciated. Two excellent classes added to the success of Mr. Teebay and Lady Louisa Thynne. They were nearly all pencilled birds.

Malays were weak, and call for no particular mention.

The *Golden-pencilled Hamburghs* were very good, and some birds were of unusual merit. Here, again, the first prizes in both classes went to the same breeder. The chickens especially were beautiful; Mr. Munn's also deserve especial mention, and Mr. Clayton's. The *Silvers* do not keep pace with the Golden, Mr. Archer's secession from this breed gave it a blow it has not recovered. Nevertheless, we may speak well of the pens shown by Messrs. Martin, Harding, Munn, and Keable. *Golden and Silver-spangled* may be mentioned in terms of the highest praise. Many of the birds were perfect, and all those that figure in the prize list deserved the distinction. There was a richness of colour and perfection of marking in these birds that we have seldom seen equalled, and all the points that were desiderata a few years since are now attained.

Polish fowls were well represented in every class, if we look at quality, but they were deficient in numbers. Most of the birds were perfect. Mrs. Pettat took three prizes, and received a high commendation for Golden. Mr. Dixon took six prizes in the various classes, Mr. Sugden two; and Mr. Adkins showed a pen of Silver Polands that reminded us of his exploits when we were some ten years younger.

The *various class* brought Anconas, Cuckoos, Silkies, Black Hamburghs, Chamois, White Polands, Crève Cœurs, and others. Many were shown in sufficient numbers to form small classes of their own. The Cuckoos, Black Hamburgh, and Crève Cœurs are of this number.

We have now to treat of the *Game*. Every breed and every colour contributed to form these beautiful classes: one hundred and six pens and single cocks are mentioned in the prize list. The *Black Reds* are first on the list. The silver cup for the best pen of Game was awarded to Mr. W. Robson. He was hard run by two notable exhibitors in these classes—Messrs. Archer and Moss; the former gentleman being also the winner of the fourth prize. Mr. John Stubbs stood first for chickens. Nothing could be more beautiful than the birds in these classes. The *Brown Reds* were not behind in merit. Mr. Moss and Mr. Wood headed the two lists, and here again Mr. Archer was second. Mr. Moss took three prizes. Messrs. Cargey and Wood also were distinguished. All these pens deserve especial mention. We think we have seen the *Duckwings* better than many of those shown here, if we except one pen, which was most beautiful and perfect in colour, but the cock was disqualified for a crooked breast. The *Blacks* and *Brassy-winged* were unusually good, especially those belonging to Messrs. Burgess, Dawson, Fletcher, and Helliwell. The *White* and *Piles* were better than common, especially the latter.

This brings us to the third branch of our report—the classes for *Single Cocks*, two hundred and forty in number. Silver Grey Dorking cocks, Lady Bagot, Mr. Cargey, and Mr. Dolby took the prizes. Here again many birds that were disqualified for colour, would have figured in general competition. In the open class for the same breed, Lady Louisa Thynne was first, with an extraordinary bird; Messrs. Tudman and Whittington followed, and they may be proud of their victory. It was no mean exploit. We can speak in high terms of this branch of Spanish competition, the struggle was a hard one, Messrs. Lane and Harding, and Captain Heaton took the prizes with capital birds. Captain Heaton's Cochin Cock is one of the best chickens we ever saw, and beat even the celebrated strain of Mr. Tomlinson. It is not easy to put this latter gentleman in the second place. Mr. Craigie monopolised both prizes for Brahma Pootras. In these classes the Spangled were better than the Pencilled Hamburghs. Messrs. W. Worrall, Fellowes, Robinson, and Lady Julia Cornwallis showed the best birds. Messrs. Hindson, Grimshaw, and Moss headed the several Game classes with *perfect* birds, and good ones were thick as "leaves in Vallambrosa."

Sebright Bantams were most excellent, but few in number, Mr. Harvey Dutton Bayley took both first and both second for Gold and Silver; Mr. Hill took both third. Black have wonderfully improved since last year, and it would be difficult to find three better hens than those that took the prize. Perfect in colour, small sized, having good flowing tails, and perfectly white deaf ears.

The *variety class* in Bantams showed very beautiful birds, especially some very heavily-booted speckled birds, that deservedly took prizes, nor must we except some exquisite white birds. They belonged to Messrs. Daft and Titterton.

Game Bantams are everywhere numerous, and this Show formed no exception. Many figured in the prize sheet, and many more deserved to do so. The printed list must speak for their merits, our space will not allow us to enumerate all that were worthy.

Although we have seen heavier pens than those that took the *Aylesbury Duck* prizes, yet we never recollect a heavier average of a number of birds. The prize pens weighed 24½ lbs., 22½ lbs., and 22 lbs. All were well chosen and well-conditioned birds. There were forty-three pens of *Rouen* Ducks, an excellent class of first-rate birds. They are fast increasing in weight. The prize pens weighed 21½ lbs., 19½ lbs., and 19¼ lbs. There were lots of birds in this class that weighed more than 6 lbs. each, and when people accustomed to see only and to recollect the three or four prize pens, birds of amazing weight, are disposed to think nothing of Ducks that weigh *only* 6 lbs. each, let them recollect what they used to be. The class for *Buenos Ayrean* Ducks has realised the anticipations of its projectors, not only in numbers, but in the quality of its birds, and in the proof afforded at each succeeding Show, the amateurs of this beautiful breed understand them. Thus we had them smaller at Birmingham than we have ever had them. *Call* Ducks, both White and Brown, with Muscovies, made up the variety class. But the ornamental birds comprised Mandarins, Carolinas, White-eyed, Brahmas, Swans, Wild Ducks, and a pair of most beautiful Sabastopol Geese. These latter birds are curious in the extreme. From the tops of the wings and the extremities of the wing-feathers, large bunches of beautiful white feathers hang curling, twisting, and flying about like shavings. If they are found to be good breeders, they will become popular.

Dismounting from our fancies, we come to the sober bird of which it is reported Queen Elizabeth said, "It was foolish; too much for one, not enough for two." There were no poultry shows in those days, and it was a tolerable Goose that weighed 5 lbs. on the table. Deduct bones, skin, and fat, and there would remain but little. If good Queen Bess could return, and if she ordered a brace of *Geese* for herself and another, she would marvel if two of Mr. Fowler's were brought—the three weighed 70 lbs.; or if Mrs. F. Blair's, that weighed 20 lbs. each. Others weighed well, but birds of 18 lbs., and in some classes of 20 lbs., had to be content with a high commendation. The heaviest weights are always among the grey birds, they seem to make about 5 lbs. more per head than the white ones. Fifteen prize pens of Geese weighed, the forty-five birds, nearly 900 lbs.

The *Turkeys* ran each other closely. The difference between the first and third prize birds in Class 91, was only 1½ lb. The nine birds in the three pens weighed 160 lbs. In Class 92, the nine birds weighed 144 lbs. We can speak most highly of the condition of many of these.

Thus ends our report of this great Show. We shall have to return to it, but may now content ourselves with saying, everything was as usual well managed. The members of the Council were *always* at their post, and nothing was neglected that could add to the comfort of the visitors, or the well-doing of the competing animals.

Messrs. Shackel, Luckcock, Matthews, Wright, J. Lowe, Adkins, Mapplebeck, Cattell, and others, were in attendance during the whole of the Show, and deserve the warmest thanks of every one who takes an interest in this great Exhibition.

Having published a list of the prizetakers last week, we now only add the names of those who had commendations.

DORKING (Silver Greys).—*Chickens.*—Commended, Countess of Chesterfield.

DORKING (Coloured).—Highly Commended, Hon. W. W. Vernon; T. W. Hill; E. Whittaker. Commended, H. W. B. Berwick. *Chickens.*—Highly Commended, A. Potts; Mrs. Pettat; Mrs. F. Blair. E. H. Gerard; J. Robinson; Mrs. F. Arkwright; J. Shaw; W. Seddon. Commended, Mrs. F. Arkwright; E. Shaw; Mrs. F. Blair; H. W. B. Berwick.

DORKING HENS.—Highly Commended, Marchioness of Winchester; E. H. Garrard; H. Lingwood; J. Smith. Commended, W. W. Bartlam. *Pullets.*—Highly Commended, Mrs. Hanbury; C. H. Wakefield; J. Smith. Commended, Lady Bagot; Mrs. Bromley, H. Lingwood; W. Bromley.

DORKING (White).—Commended, Mrs. F. Blair; H. Lingwood. *Chickens.*—Highly Commended, Mrs. H Fookes, J. Robinson, Mrs. M. A. Beardmore.

SPANISH.—Highly Commended, Miss M. L. Rake; W. R. Bull. *Chickens.*—Highly Commended, Miss M. L. Lake; A. Campbell; R. W. Boyle; R. Teebay; J. Smith; W. R. Bull; H. Lane. Commended, J. W. Smith; J. K. Fowler; J. Martin. *Hens.*—Commended, Mrs. L. C. Stowe; J. H. Craigie.

COCHIN-CHINA (Cinnamon and Buff).—Highly Commended, Miss V. W. Musgrove; H. Bates. Commended, C. Felton; H. Tomlinson. *Chickens.*—Highly Commended, C. Felton; S. Statham. Commended, Mrs. Herbert; H. Bates. *Hens.*—Highly Commended. H. Bates. Commended, Mrs. E. A. J. Fox. *Pullets.*—Highly Commended, H. Bates; S. Statham

COCHIN-CHINA (Brown and Partridge-feathered).—Highly Commended, Mrs. Herbert. *Chickens.*—Highly Commended, J. B. Walthew; Miss V. W. Musgrove; P. Cartwright. Commended, D. S. Moore, J. Hindson. *Hens.*—Commended, P. Cartwright. *Pullets.*—Highly Commended, C. Felton.

COCHIN CHINA (White).—Highly Commended, C. R. Titterton. Commended, W. Dawson. *Chickens.*—Highly Commended, W. Dawson; C. R. Titterton. Commended, Mrs. F. Blair; C. R. Titterton; R. Chase.

BRAHMA POOTRA FOWLS.—Commended, J. H. Craigie. *Chickens.*—Highly Commended, Mrs. F. Blair; C. H. Adames. Commended, Mrs. R. Teebay; Mrs. F Blair.

MALAY.—*Chickens.*—Highly Commended and Commended, C. Ballance.

HAMBURGHS (Golden-pencilled).—*Chickens.*—Highly Commended, J. Munn; Carter and Valiant; W. Kershaw. Commended, Rev. N. Gresley; Carter & Valiant

HAMBURGHS (Silver-pencilled).—Highly Commended, W. H. Kerr. *Chickens.*—Commended, D. Harding; W. H. Kerr.

HAMBURGHS (Golden-spangled).—Commended, W. R. Lane; H. Carter. *Chickens.*—Highly Commended, W. Kershaw. Commended, W. C. Worrall; J. Ashcroft.

HAMBURGHS (Silver-spangled).—Highly Commended, Mrs. Pettat; H. Carter. Commended, R. Teebay. *Chickens.*—Highly Commended, Mrs. Pettat; J. Fielding; J. Ashcroft. Commended, C. [illegible] J. Hardman; [illegible] Harding; [illegible] *Hens.*—Commended, [illegible] Kershaw; J. C. Hardman.

POLISH (Black with White Crest).—Highly Commended, G. Ray.

POLISH (Golden).—Commended, Mrs. Pettat. *Chickens.*—Commended, J. Dixon.

POLISH (Silver).—Commended, Mrs. Pettat; G. C. Adkins; R. W. Boyle. *Chickens.*—Commended, H. Beldon.

OTHER DISTINCT VARIETIES.—Highly Commended, Countess of Aylesford (Cuckoo). Commended, Rev. P. H. Nind (Black Hamburghs); Lieut.-Col. Clowes (Andalusians); W. Dawson (Sultans).

GAME (Black-breasted Reds).—Highly Commended, Hon. W. W. Vernon; R. Swift. Commended, N. Grimshaw. *Chickens.*—Highly Commended, W. Cox; R. Swift; E. Archer; W. Robson; S. G. Holton; J. Smith. Commended, J. P. Smith; N. Grimshaw; J. Stubbs.

GAME (Brown and other Reds).—Highly Commended, E. Archer; W. Dawson; T. Burgess, jun. *Chickens.*—Highly Commended, T. Burgess, jun.; R. I. Robinson; G. Cargey; G. W. Moss; G. E. Meredith; J. Doncaster. Commended, A. B. Dyas.

GAME HENS (Black-breasted and other Reds).—Commended, R. A. Cottrill. *Pullets.*—Highly Commended, G. W. Moss; R. A. Cottrill; J. Morris. Commended, M. H. Walker.

GAME (Duckwings and other Greys and Blues).—Highly Commended, G. Bradwell; W. Dawson. *Chickens.*—Commended, Marquis of Hastings; G. Bradwell; T. Carless.

GAME (Black and Brassy-winged, except Greys).—Highly Commended, H. Lowe; J. Harrison; F. Munn. *Chickens.*—Highly Commended, W. Dawson. Commended, H. Lowe.

GAME (White and Piles).—*Chickens.*—Commended. J. Fletcher. *Pullets, except Reds.*—Highly Commended, T. T. Burman. Commended, J. Hope.

SINGLE COCKS.

DORKING (Silver Grey).—Highly Commended, Earl of Chesterfield; Lord Bagot. Commended, W. Bromley.

DORKING (Except Silver Grey).—Highly Commended, Hon. W. W. Vernon; T. W. Hill; Rev. E. Cadogan; J. D. Hewson; E. Shaw; Mrs. Pettat; E. H. Garrard; T. L. Brown. Commended, Rev. J. G. A. Baker.

SPANISH.—Highly Commended, C. R. Titterton; J. W. Smith; T. F. Wood, jun.; R. Teebay; Rev. C. Lowndes; R. Paton. Commended, Miss M. L. Rake; J. W. Smith.

COCHINS (Cinnamon and Buff).—Highly Commended, Mrs. H. Fookes. Commended, H. Bates.

BRAHMAS.—Highly Commended, Mrs F. Blair. Commended, R. Teebay.

HAMBURGH (Golden-pencilled).—Highly Commended, G. H. Wakefield. Commended, E. A. Wilkinson.

HAMBURGH (Silver-pencilled).—Commended, D. Harding.

HAMBURGH (Silver-spangled).—Highly Commended, H. Carter. Commended, J. Dixon.

POLANDS.—Highly Commended, C. J. Samuels. Commended, Mrs. Pettat.

POLANDS (White, Piles, Duckwings, and others, except Red Game).—Highly Commended, J. Doncaster; H. Lowe; H. Worrall. Commended, G. Ray; J. Percivall.

POLANDS (Black-breasted Reds).—Highly Commended, E. Lister; W. R. Lane; R. Swift; J. Fletcher; J. Orr. Commended, W. Robson, E. Archer.

POLANDS (Brown and other Reds).—Highly Commended, G. W. Moss; T. Burgess, jun. Commended, J. Choyce, jun.; R. Adcock.

BANTAMS (Black, Clean-legged).—Highly Commended, J. W. George. Commended, J. W. George; J Mann; J. J. Horton.

BANTAMS (Black-breasted and other Red Game).—Highly Commended, E. Cope; T. H. D. Bayley; J. Camm; H. Shield; J. Holme; M. Turner.

BANTAMS (Game or other Varieties).—Highly Commended, Miss V. W. Musgrove; R. Hawksley, jun.; J. Camm; W. Silvester. Commended, Miss V. W. Musgrove; W. Silvester.

BANTAMS (Game Cocks).—Highly Commended, R. Hawksley jun.; T. H. D. Bayley; J. Camm. Commended, T. H. D. Bayley.

DUCKS (Aylesbury).—Highly Commended, Duchess of Marlborough; J. K. Fowler. Commended, J. W. George; Mrs. M. Seamons.

DUCKS (Rouen).—Highly Commended, Mrs. F. Blair; A. Campbell; H. Worrall; W. G. K. Breavington; R. Hawksley, jun. Commended, W. Joshua; W. H. Denison; H. Worrall.

DUCKS (East Indian).—Highly Commended, Miss Clifton; J. Martin; C. Baker; F. W. Earle. Commended, Rev. T. Green; J. W. Smith.

DUCKS (Any other Variety).—Highly Commended, E. H. France (White Call); R. W. Boyle (Bahama); W. Joshua (Wild).

GEESE (Grey and Mottled).—Highly Commended, Marchioness of Winchester; W. Kershaw. *Goslings.*—Highly Commended, Sir R. Peel. Commended, Mrs. M. Seamons.

TURKEYS.—Highly Commended, Mrs. Sherrat; T. Satchwell. Commended, Marchioness of Winchester. *Poults.*—Highly Commended, T. Satchwell; Rev. T. L. Fellowes; J. Smith. Commended, Mrs. F. Blair; E. Guy; J. Beasley.

PIGEONS.—*Carriers.*—Highly Commended, J. Smith. *Almond Tumblers.*—Commended. G. F. Nicholls; A. L. Silvester. *Balds.*—Commended, S. Shaw. *Jacobins.*—Highly Commended, J. T. Lawrence. Commended, G. F. Nichols, *Fantails.*—Highly Commended. G. F. Nichols; Cock Highly Commended. G. C. Adkins. Commended, J. T. Lawrence. *Trumpeters.*—Highly Commended, W. H. C. Oates; S. Shaw. Commended, G. C. Adkins; D. Thwaites. *Pouters or Croppers.*—Highly Commended, T. Ridpath. *Mottled Tumblers.*—Highly Commended, G. E. Nichols. *Owls.*—Very Highly Commended, H. Morris; M'Gregor Rake. Highly Commended, F. Else. *Turbits.*—Commended, G. F. Nichols. *Barbs.*—Highly Commended, M'Gregor Rake; P. Eden. Commended. G. Goore; C. Felton. *Runts.*—Highly Commended and Commended, G. C. Adkins. *Dragoons.*—Highly Commended, H. Yardley; F. Else. Commended, S. Shaw; C Felton. *Other Varieties.*—Highly Commended, H. Morris; A. G. Brooke (Wonga-Wongas). Commended, E. A. Hargrove (Frillbacks); S. Shaw.

The JUDGES of Poultry were—the Rev. R. Pulleine; G. J. Andrews, Esq.; Mr. Baily; and Mr. Challoner. And of Pigeons, Mr. H. Weir, Lyndhurst Road, Peckham, London; Mr. T. J. Cottle, Pulteney Villa, Cheltenham.

THE BATH AND WEST OF ENGLAND SOCIETY have fixed their next exhibition, at the city of Wells, for the 27th, 28th, 29th, [illegible] 30th of May, [illegible]

WINTER-LAYING POULTRY.

I sometimes see in the Journal inquiries relative to the winter-laying qualities of different breeds of poultry. I have always found that the cross between the Spanish and Cochin produce the best layers. These pullets again crossed with Black Hamburgh are first-rate layers. I prefer the Black, as they are better layers than the Golden-spangled, and lay larger eggs than the Silver-spangled. I set aside the Pencilled, as they lay such small eggs.

The best layer I ever had was one of the last-named cross. She was hatched on the 18th of March, 1858; laid her first egg on the 4th of August, and on the 17th of November had laid eighty-one eggs. She then stopped, and partially moulted. She began again to lay on the 25th of December; her eggs were large, and one of the eighty-one was double-yolked. After this I did not keep an account of her eggs; but she continued laying the whole of the spring and summer with very little interruption. In the autumn she became broody, and moulted.

She is still living, and is the best layer in the yard, and her eggs are very large.—J. L.

FOOD FOR POULTRY.

In looking through "Our Letter Box" of your impression of November 26, I find under the head of "Food for Hens," you recommend to your correspondent ground but undressed oats as food for Cochin-China fowls, that being the best to cause them to lay the winter through. Now, I for my part have been attending to the directions given in your "Poultry-Book for the Many," which states that potatoes, barleymeal, bran, and rice, should in certain proportions be mixed and given twice a-day, and whole barley at noon.

I have what I believe to be the pure Cochin-China fowl, and giving them the food as above, under the impression that I shall in due time be rewarded by a fair supply of new laid-eggs. Am I right in my supposition, or must I have recourse to the oats in lieu of the potato food, &c. I do not see that the manual speaks of the undressed oats as food. If you will kindly answer my query in your next impression you will greatly oblige.—One in Doubt.

[For poultry breeding-stock, the object to be aimed at is healthful vigour, well-developed muscles, and very little fat. To secure this, it is desirable that the poultry manager should have at his command barley, boiled potatoes or rice (we prefer the former), bran, and ground barley or ground oats (the latter for choice, though both are nearly equal in nourishing power). In cold weather or when the fowls seem too thin, or out of condition, give chiefly ground oats or ground barley, and whole barley. In hot weather, or if the fowls show symptoms of too much fat, give more boiled potatoes and bran and less of corn in any form.

No high feeding will make old hens lay in winter. Early pullets will do so naturally if in vigour, and the laying may perhaps, be accelerated by a very little bread soaked in ale; but over-stimulating them is bad management.]

Crystal Palace Winter Poultry Show.—The following are the number of pens taken in each class at this Exhibition, which opens to-morrow:—Spanish, 92; Dorking, 187; Cochin-China, 91; Brahma Pootra, 21; Game Fowl, 183; Hamburghs, 116; Polish, 24; Malay, 11; Other Varieties, 23; Bantams, 79; Geese, 7; Ducks, 41; Ornamental Water Fowl, 3; Turkeys, 23; Gold, Silver, and other Pheasants, 6; Pigeons, 314; Rabbits, 110. Total, 1331.

Aberdeen Poultry Show.—We have received a schedule of this Exhibition, to be held on the first and second days of January next. The classes are certainly somewhat limited, and the premiums offered are not of great amount; still perhaps quite as much as the requirements of a first show call for. On future occasions, should success attend the coming meeting, no doubt the prizes will be increased in value, and certainly the attempt to establish a poultry show so far north as Aberdeen proves that the taste for poultry culture is even yet extending. In the Pigeon classes we notice a premium offered for Ruffs; we presume it is intended for Jacobins. It is our conviction the classes for Single Cocks at Aberdeen will prove a failure, the premium offered being only 10s. to each of the four varieties selected—viz., Spanish, Dorking, Cochin-China, and Game fowls, subject to this condition: "Entry money for the single cocks, 2s. 6d. each, and not less than four of each breed to form a competition." Surely after paying 2s. 6d. entry, and carriage, the only inducement here left by such contingency, is for amateurs to compete simply for the honour of mastery; any prospect of gain being almost hopeless. We wish the promoters success, and doubtless another year the prize list will be revised.

MR. TATE'S DEFENCE, AND SOME FACTS IN REPLY.

It is an old and true saying that "he who is first in his own cause seemeth just." I have been much surprised at a one-sided statement which has appeared in your Journal regarding a transaction between Mr. Sandford, of Plymouth, and myself; and as you have permitted him to state his case, I trust that, in common fairness, you will allow me to state mine, that the public may judge between us, and I be relieved of a charge, which is at least covertly laid against me—viz., that of a swindler.

Mr. Sandford made me an offer of a pen of Duckwings, a pen of Black Red Bantams, and two Spanish pullets for the Black Red Game cock and the pen of Duckwings advertised. I accepted that offer, providing he would send me his birds on approval, to which he agreed. As several days elapsed without my either hearing from him or receiving the birds, I again wrote, asking whether he really wanted my birds. He then sent me the Black Reds, and, in place of the Duckwings, two blue-legged Black Red pullets and one hen; the three birds worth about 7s. 6d., whereas he considered the Duckwings worth about £4 10s.

A few days after the birds arrived, Mr. Sandford wrote to me, saying he had sold the Duckwings, and had sent me the others, which, if not approved of, I was to return. I considered he ought to have written to me before sending them, and have told me he had sold the Duckwings, inasmuch as they were the birds I especially wanted. Did he not fasten the bargain by sending the Black Reds, as it was part of the contract?

When I wrote telling him the Duckwings were all I cared for, he replied that I might have them for £4 10s., and yet in a previous letter he asserted they were sold; and I find also he has since exhibited them more than once.

The place from whence Mr. Sandford's letters are dated (Mannamead) and the letters themselves would prove him to be a highly respectable man, and a person of education. I do not know by what name they would characterise such conduct in polite circles, but I do know what we should call it in Yorkshire.

I am quite ready to allow any unprejudiced person to judge between us or the correspondence. If it be proved that I have acted dishonourably I will apologise, and make any just reparation to Mr. Sandford; but should it be given in my favour I certainly shall expect him to do the same to me.—Robert Tate, *Driffield*.

We forwarded Mr. Tate's letter to Mr. Sandford, whose observations upon it are as follows:—

"Since the publication of my letter in The Journal of Horticulture, I received a letter from Mr. Tate, saying he would forward me the Birmingham Black Red cock, and a hen to match, as soon as he returned from the Darlington Show, for which he was entered for the sweepstakes. I immediately answered his note, stating that I would have nothing more to do with him, and the only way for him to get out of the scrape was by returning my Bantams, or £3, for I found since my letter was published, that he had actually sold the Black Red cock to Dr. Shaw, of Kirkham, at the very time he offered it to me. Now, in my last letter to him declining to have anything more to do with him, I really could not help pitying a man who would place himself in such a position, and I told him if he would do as I wished, I would not publish his correspondence with Dr. Shaw on the subject. His answer to me is, that Dr. Shaw never had the bird, but that he had started it off to me that day with a hen to match, and he hopes this would compensate me for the Bantams.

"It is needless to point out to you that he has either swindled Dr. Shaw, and sent me the birds, or has done us both, which I expect is about the truth, as Dr. Shaw observes it is just possible you will find many parties think themselves the happy possessors of this identical bird. Dr. Shaw, of course, as you will see by the letter I enclose, paid 30*s.* for the bird, as the second in the sweepstakes last Birmingham Show, then belonging to Swift. Mr. Tate's answer to me on my pointing out the discrepancy in the transaction as regards his offering me the bird when it was already sold to Dr. Shaw, and in his possession, I think is rather characteristic, 'Dr. Shaw was satisfied, and that was enough, the bird was not the Birmingham bird, but one of Swift's breed.' I should tell I received a cock bird and a hen on Saturday from him, in spite of my remonstrance. I need not tell you the bird he sent me no judge ever awarded a prize to in his life.

"Now, I should not have troubled you with these remarks, which I send for publication, had not Mr. Tate thought proper to justify his conduct in this transaction. As to his remarks respecting my having sold the Bantams, to which he was entitled, it is a very lame excuse, as he owns himself in his letter to you that he had only to return the birds I had sent him, if he did not approve of them; and as to the description he gives of them, I think the best arguments I can put forth, that the birds were really excellent, is, that Mr. Tate would not return them, although frequently solicited by me to do so; but he preferred sending me the Birmingham sweepstakes cock.

"You will see by the dates of the enclosed letter, that the very time he was in treaty with me for the disposal of this bird it was the property of Dr. Shaw.

I think this will answer Mr. Tate's remonstrance to you. It is immaterial as to the locality, but I think there can be but one name for the transaction.

"As regards Mr. Tate stating that I offered him the Duckwing Bantams for £4 10*s.*, after I stated they were sold, the accusation is simply absurd. The pen I offered him for that price was my best birds, and I have exhibited them frequently with success. The birds I sold are now in the possession of a party in Devonport, and were certainly inferior to the ones I offered to sell for £4 10*s.*—V. SANDFORD."

[We have seen Mr. Tate's letters to Mr. Shaw, and to Mr. Sandford, and they fully sustain all which the latter has stated, and something more. These facts coupled with those stated in Mr. F. Baily's communication last week, and the events of former years, we hope will place Mr. Tate in a true light before our readers. We hope that both Mr. Shaw and Mr. Sandford will give directions to their solicitors to proceed in *any* way they may consider the facts justify. We know how we should proceed.]

THE RABBIT (LEPUS CUNICULUS):

ITS HISTORY, VARIETIES, AND MANAGEMENT.

(*Continued from page* 80.)

MANAGEMENT.

CHOICE OF BREEDING STOCK.—The females should be physically strong, the body long and well developed, the hind legs large and well apart, teats apparent, even when not pregnant, and filled with milk at the approach of birth. The doe should not be allowed to breed at less than six months old, although they may engender at five months; but it is better, if you wish to preserve a fine race of Rabbits, to wait till they are eight or nine months old, before you allow them to bear. If under six months they would only produce weak and delicate young ones. Indeed Nature, with all her efforts, could not suffice for the development of the mother, and give the nutrition necessary for the young at an earlier age.

As the choice of the female is important, that of the male is not less so. The buck should possess the same physical proportions as the female, with the addition of a larger head and body, and should be at least eight or nine months old, and if well taken care of, he will continue to produce fine vigorous young ones till four or five years old.

The most gentle and tame females should be chosen, as the turbulent often destroy their young; but the males should be hardy, bold, and vigorous.

SIGNS OF HEALTH.—Both males and females should be moderately fat, their fur sleek and shining, their eyes bright, and [illegible] lung dry and hard.

BREEDING IN-AND-IN.—It has been proved by numerous facts, [illegible] multiplication by the son and mother, or between brothers [illegible] sisters, is a powerful cause of the degeneracy of races as [illegible] and health. Indeed Rabbits of one uniform colour, that multiply in their own family, offer from the third generation, white spots on the fur, prejudicial to the value of it. Fecundity also insensibly diminishes, and weak consumptive Rabbits are produced, subject to internal derangements, and seldom living over the first moult, but usually dying off at from four to six weeks old.

HARE RABBITS.—Few are ignorant of the unsuccessful attempts of the many celebrated naturalists to obtain hybrids, by the crossing of the Hare with the Rabbit. This want of success appeared so conclusive, that all fresh attempts had been given up. It is thought, by some persons of good authority, that the wildness and cowardice natural to the Hare has been the only cause; indeed, if you bring up a male Hare in the company of Rabbits, male and female, he usually remains timid and wild, and in several establishments has been kept for years without manifesting any desire of propagation. It seems that this is not the case by attempting to obtain hybrids between the male Rabbit and female Hare, who is not so wild and timid as the male Hare.

This opinion, which is that of several French writers and is mentioned by M. Didieux, has been put in practice with success in the department of the Cher, at least we are assured so by M. Goubault, Professor of the "Ecole Imperial Veterinaire d'Alfort." He says that he has seen in one single establishment, nearly three hundred hybrids of this kind, that had the valuable faculty of reproduction among each other, and that their flesh appeared infinitely superior to that of the Rabbit.

The hybridising of Rabbits has been tried at the Zoological Gardens in London, this last season without success; but the superintendent informs me he has no doubt that he shall be able to produce them in the coming spring.

GESTATION.—Pregnancy continues from thirty to thirty-one days, and a memorandum should be made in the stud-book to indicate the day of the doe's fecundation, in order to separate her from the young she is suckling at least a week before to strengthen her, and clean the hutch out and prepare by giving litter to make her bed for her new family. If she is suckling and pregnant at the same time she must be fed with rich and succulent food and occasionally a little salt be given to increase her appetite; of food let her have as much as she likes to eat.

Females that fill the double office of suckling and breeding at the same time, are often so thirsty, that they devour one or two of their young ones to allay thirst by sucking the blood. It is then indispensable to give them at least twice a-day, a good handful of green stuffs, and about half a quartern of water once a-day. The captive Rabbit does not know how to be sober with water, and suckling mothers must be rationed. With respect to drinks, I have reared several litters of very fine strong Rabbits in the winter when green food was scarce, by giving only milk to the mothers, as much as they liked to take—in fact, they had a trough affixed to the hutch, and which was filled each time they were fed with other food.

SIMULATED GESTATION.—Rabbits that have not become pregnant frequently offer the physiological phenomena of a real gestation. They prepare their nest, their teats swell, and the secretion of milk takes place. They have been known to adopt, when the opportunity offered, strange young. Harvey, the immortal discoverer of the circulation of the blood, says that he has seen and observed this physiological phenomenon in Rabbits.

MISCARRIAGE.—Too much violent exercise, chiefly from fear, causes often a sudden miscarriage. It is true that it is seldom dangerous, and the Rabbit may again receive the male a few days after. Violent claps of thunder are one cause of abortion. Frozen green food, wet or too watery green food, is often a cause that admits of prevention.

DELIVERY.—When the Rabbit is strong and vigorous she is delivered easily and without violent pain. This phenomenon is owing to her particular organisation. The successive births sometimes last twenty-four hours. During parturition the Rabbit loves quiet and secresy, and it is for this reason that it is customary to cover the door of the hutch over with a cloth from the twenty-eighth day of gestation. Rabbits frequently die from a laborious birth, or from weakness, the result of leanness or of bad food, even from too watery green food given during any length of time.

SUCKLING.—Four or five days before the birth, as I have before said, you should renew the litter and leave the Rabbit [illegible] her nest. Delivered, she closes the opening of her nest and watches with solicitude by the side of her new family. She suckles them several times a-day, but chiefly at night. The Rabbit loves to be delivered in secret, and she also likes to suckle her young in secret; if she is surprised in this important function of maternity, she starts away suddenly and drags with her several little ones out of the nest. The mother does not replace them, and they perish with cold unless the feeder does it for her.

WEANING.—At the age of five or six weeks the young should be weaned by removing them from the mother. The young are much finer if left till seven or eight weeks old with their mother; but in that case you diminish the number of young, by allowing the mother to bear less frequently. The weaned Rabbits should be placed with others of the same age, if possible, in spacious, clean, warm hutches, with plenty of broken straw for their bed. Great cleanliness assists their development. They should have tender, tonic, succulent food, a little barley-meal four times a-day and whatever they leave may be distributed to the older and less dainty Rabbits.

(*To be continued.*)

SUPER-POSING.

THE upper of two hives united will at the end of the season contain the bees. Such is a fact, and

> "Facts are stubborn chiels that wanna ding,
> And daurna be disputed."

and which no amount of evasion or clever theorising on the part of "A DEVONSHIRE BEE-KEEPER" away from the point can ever controvert.

This case has got so enveloped in a mass of verbiage that your correspondent seems fairly to have lost sight of the point at issue. Stripped of all such, it stands forth simply this.

"A. W." had two hives he proposed to unite (page 38) for the sake of getting the bees to vacate the lower unwieldly box so that he might remove it—"in the cold weather"—thinking, naturally enough, that confining them to the upper lesser hive would enhance the probability of the wished-for swarm the coming season. He was told, in answer, that they would not so ascend; but "descend into the lower hive." This reply being quite at variance with all my experience of such cases, I could not resist fraternally expressing a contrary opinion, and quoted the last parallel case from my own apiary for his benefit, page 78. That opinion was flatly contradicted by "A DEVONSHIRE BEE-KEEPER," and I most cordially agree to differ with him thereupon; and seeing that one of the most experienced bee-keepers in the kingdom, after forty years' practice of storifying, involving continually such cases, has failed to convince him of his error, my attempting so hopeless a task longer would be but a useless encroachment on your valuable space.

I would not again have alluded to this subject were it not that your correspondent has thought proper, to ascribe as my opinion, "that bees are disposed to adopt the upper compartments of storified hives as their breeding-place." Were it not that he is a tolerably sharp observer of the bee articles in your back volumes, such an expression would be more excusable; but did he overlook such at the moment he penned the sentence, his beguiling a leisure hour in perusing these articles will supersede the necessity of my quoting here the frequency with which I have expressed the inverse opinion. Such an opinion he puts forth as mine. I never gave utterance to, nor wrote a line that could be twisted to bear such a construction. I am, therefore, forced to the conclusion that the printer must have inadvertently substituted the word "breeding" for "feeding place," the one having some connection to the subject, the other manifestly none.

Your correspondent also unhappily quotes the "tier of ekes" I referred to as an argument in his favour. The sequel of that story showed that the bees, instead of "hatching out any brood that might be in the upper box," and descending into the "tier of ekes," agreeably to his theory, hatched out the brood in the ekes and ascended into the upper box; so that these were removed entirely empty, and their combs have served for a considerable time another useful purpose as detailed in page 159. Altogether from the very peculiar mode of reasoning adopted by "A DEVONSHIRE BEE-KEEPER," I for one must decline entering the lists against him for the future, however *outré* the opinions he may put forth.

When Mr. Fox's attention was drawn to this case, had it been set before him in its real merits he could not have failed to perceive that breeding honey, or pollen storing, at such a season, and in any way to affect the desired object, was quite foreign to the subject; it altogether hinging on what part of the hive the inmates prefer to adopt as their winter quarters; and that correspondent saved from the awkward dilemma of employing arguments to confute a brother apiarian, which in more appropriate circumstances he had perhaps too frequently adduced.

While on this subject, for the benefit of the novice, I may mention, that by this most productive of all systems of bee-keeping, the storifying, the mode "A. W." proposed to pursue, is practised at the end of every season with almost every hive, the lower portion so soon as vacated is removed, the slides run in, and the door shut, and the hive set upon a board with the view of excluding the air for the better preservation of the comb, and an empty shallow eke substituted in its stead, so that there may be always a free circulation of fresh air below to prevent dampness. I found on more than one occasion when I had neglected this useful rule, my little favourites, sore pressed by long confinement during frosts, converted the lower compartment to a necessitous purpose, served by a smaller chamber in larger mansions. The empty comb is returned when the hives appear crowded the following season.

That bees ascend to occupy the upper portion of their hives during the dormant season, amounts to a truism in storifying, and amply confirmed to the most casual observer, by a glance at the loaded upper boxes or tops of comb, that as surely as the wintry frosts send up the occupants of the summer box to town, so surely will they drive up our little favourites to take possession of their comfortable, well-stored, upper home. The same attractive influences of summer sun and opening flower that prompts the maternal longings to go down into the country, and re-occupy the old residence, impels the royal mother to go down into the vacated summer mansion, causing it once more to resound with the pleasant hum and busy stir of her more numerous progeny and larger establishment.

Presuming this subject now fairly exhausted, it must afford you some satisfaction in return for the space its discussion has occupied; you being able, in all times coming, to refer future querists, as to such cases for full details, to the now notorious "A. W." cause.—A RENFREWSHIRE BEE-KEEPER.

P.S.—Although, I by no means advocate introducing food as a rule directly into the combs, I never experienced any bad effects in those cases I tried it, and do not know anything of the chemical changes "A DEVONSHIRE BEE-KEEPER" mentions. My exemption from such may arise from having had recourse to this mode at a time when the heat of the laboratory was sufficient to enable the little chemists to secrete wax in abundance, thereby allowing its being sealed up at once. If introduced in large quantities and left exposed it might possibly sour. The term "waste" your correspondent cavils at, if my memory serves me, was formerly employed by himself.

DIARY FOR THE DAIRY, PIGGERY, POULTRY-YARD, PIGEON-HOUSE, AND APIARY, FOR 1862.—This very useful annual (edited by a well-known "Essex Amateur," and published by Routledge and Co.) has again issued from the press. It combines, as usual, an account-book and memorandum-book for all the expenses and proceedings of those departments in rural economy; besides calendars of the work especially desirable to be attended to in each month; remedies for diseases; hints as to feeding the animals, &c.

LIGURIAN BEES.—The hive first introduced into Scotland swarmed thrice in the beginning of June, and these young swarms again produced other three large swarms which increased them to seven, including the original hive, all of which are well stored with food for their winter's keep; and these have been still further increased by artificial swarming; so that Mr. J. Swan, of Dunse, who introduced them here, has now eleven strong hives of Ligurians in his apiary, to which may be added another hive that has turned out an Anglo-Italian. These twelve have been all reared from the one during the present summer; and, notwithstanding this extraordinary subdivision, they are heavier than those of the other variety, which have been allowed to work in the usual way. Premising that the object in view was the multiplication of stocks rather than the produce of honey, it will thus appear that they have proved themselves worthy of an introduction into our country. This is the first entire summer which the Italian bee has had in Scotland; and, in so far as they have been tested, they have proved their superiority, and are likely, ere long, to take the same position in Scotland that they are doing on the continent—viz., superseding the original variety as they can be obtained.—(*Scottish Farmer and Horticulturist.*)

PARTHENOGENESIS IN THE HONEY BEE.

I am obliged to "Investigator" for his suggestions as to the best means of verifying the phenomenon of parthenogenesis in the honey bee, and shall be glad of his valuable assistance in these researches. In fact, I am desirous of appealing for aid to all the apiarian readers of The Journal of Horticulture, who may have the opportunity, and are able to devote a little time to this investigation.

I have not myself very much faith in the value of the diurnal observations recommended by "Investigator," but should prefer insuring the virginity of queen bees by interposing an insuperable obstacle to their fecundations. This may be effected either by breeding them early in the spring when no drones are in existence to impregnate them, or late in the autumn after all drones have disappeared. The same object may be secured during summer by adopting Huber's plan of a contracted entrance, which will not allow the queen to leave the hive; or clipping her wings as soon as she emerges from her cradle might be tried. Whenever a queen bee has been produced by either of these means which proves incapable of laying any eggs but those of males, I shall be happy to dissect her, and confirm by microscopic examination the fact that she is really a virgin mother.—A Devonshire Bee-keeper.

I notice the remarks of "Investigator" in your Journal of the 26th of November, and, in reply, beg to inform him that the drone-laying queen there referred to, was closely examined both morning and evening until the 22nd of July, and no symptom of impregnation was ever observed. I then left home for a week, but found no eggs deposited in the cells on my return.

I then commenced to feed the hive liberally, and the workers at once began to import pollen, and the queen almost immediately began to lay. If the stimulus had been given at an earlier period, the excitement and heat generated in the hive would probably have induced the queen to leave home and go in quest of drones.

The close examination of the queen, however, is really of little or no moment. In this case she unquestionably laid many eggs in worker-cells, all of which produced drones, and this circumstance at once led me to believe that she was unimpregnated, and I sent her to "A Devonshire Bee-keeper," in order that he might, by dissection and microscopical examination, discover if she was still a virgin. The examination proved most indisputably that she was unimpregnated, and thus clearly demonstrated the truth of the doctrine of parthenogenesis in the honey bee.

If this queen had had intercourse with a drone, the spermatheca could not have failed to exhibit traces of impregnation, but its contents were found to contain a perfectly clear fluid (exactly the same as those of a virgin queen) without the slightest trace of any of the countless myriads of spermatozoa invariably discovered in the spermatheca of a fertile queen.

We can only make conjectures as to the cause of her remaining unimpregnated; and the reasons assigned, taken in conjunction, appear to account pretty satisfactorily for so unusual a circumstance. If the weather had been more favourable or the colony more populous, I doubt not she would have left the hive and have been fertilised.

Every one conversant with bees is aware that a weak hive is much later in breeding than a populous one, and the shape of a unicomb-hive, by preventing the clustering of the bees, is particularly ill adapted for encouraging the laying of the queen, and I have always found queens in this hive discontinue laying very early in the season, whilst those in more commodious hives [illegible] still laying pretty freely.—J. E. Briscoe, *Wolverhampton.*

[illegible] "A Devonshire Bee-keeper" say if the "fatherless [illegible]ies" (drones, of course, I mean) bred from virgin queens [illegible] capable in their turn of propagating the species, or are such [illegible]malies in Nature incapable of production like mules?

Should they be so constituted as to reproduce their kind, would [illegible] not be desirable [illegible] your Devon correspondent keeping, say, a [illegible] stocks [illegible] keep up a supply of males all the year round, enabling him to fertilise young queens much earlier and later in the season than formerly, and yet satisfactorily fulfil his engagements to his subscribers?—W. J.

[There is no doubt that drones bred by virgin queens are perfectly capable of propagating their species. In fact, I believe that the one whose post mortem examination was recorded in page 97 was the progeny of a virgin. The maintenance of two stocks with drone-breeding queens at their head would probably be too great a tax on the resources of my apiary; but I fancy I have one very handsome Ligurian queen of this description, which will be valuable in the event of an unpropitious season again leading to an indiscriminate slaughter. She will not, however, be of much use in protracting the season for queen-breeding, since natural drones are usually present in sufficient numbers as early and as late as the weather is sufficiently favourable.—A Devonshire Bee-keeper.]

Birds and Insects.—At the late agricultural meeting at St. Gallen, in Switzerland, Baron von Tschudi, the celebrated Swiss naturalist, dwelt on the important services of birds in the destruction of insects. Without birds, said he, no agriculture and vegetation are possible. They accomplish in a few months the profitable work of destruction which millions of human hands could not do half so well in as many years; and the sage, therefore, blamed in very severe terms the foolish practice of shooting and destroying birds, which prevails more especially in Italy, recommending, on the contrary, the process of alluring birds into gardens and cornfields. Among the most deserving birds he counts Swallows, Finches, Titmice, Redtails, &c. The naturalist then cites numerous instances in support of his assertion. In a flower garden of one of his neighbours three all rose trees had been suddenly covered with about 2000 tree lice. At his recommendation a Marsh Titmouse was located in the garden, which in a few hours consumed the whole brood, and left the roses perfectly clean. A Redtail in a room was observed to catch about 900 flies in an hour. A couple of night Swallows have been known to destroy a whole swarm of gnats in fifteen minutes. A pair of Golden-crested Wrens carry insects as food to their nestlings upon an average thirty-six times in an hour. For the protection of orchards and woods Titmice are of invaluable service. They consume, in particular, the eggs of the dangerous pine-spiders. One single female of such spiders frequently lays from 600 to 800 eggs twice in the summer season, while a Titmouse with her young ones consumes daily several thousands of them. Wrens, Nuthatches, and Woodpeckers often dexterously fetch from the crevices of tree-bark numbers of insects for their nestlings.—(*Once a-Week.*)

OUR LETTER BOX.

Length of Rabbits' Ears (*D. E. M. S.*).—First-prize lop-eared Rabbits usually have ears about 22½ inches long from tip to tip, and 4½ inches broad at the greatest width of each.

Jay Moulting Slowly (*J. M.*).—I would advise a tonic for the Jay, put some smith's forge water in his drink. To strengthen him, give him eggs and young mice, or birds to eat—such food he would get when wild. Dust some sulphur among his feathers, well into the quills all over his body, and when strong enough let him bathe. The tail-feathers if broken off may be pulled out and will then grow again.—B. P. B.

Food for Canaries (*Another Lover of Birds*).—You had better not give the German Canary either rape or hempseed. Good, clean, bright canary seed, a few shelled oats, and a little mawseed occasionally. Plain home-made bread, or a little bread and milk, is better than the sponge cake you give. Examine the cage to see if there any mites in it, and if so, get rid of them and fill the cracks with sulphur, and dust some among the birds' feathers. It may be the bird has vermin or a swelling of the rump-gland.—B. P. B.

Driving and Uniting Bees (*A Beginner, Settle*).—Your story reminds us of an equestrian novice, who, intending to ride ten miles in a certain direction, should commence by proceeding five miles on the wrong road, and then propose to ride half-a-dozen miles across a difficult country with the view of regaining the right track. Could we be by your side to instruct you where to save your good steed, and where to ply whip and spur without stint, you might probably pull through; but under present circumstances we know of no instructions that we could give which would insure you against "coming to grief." Do not, therefore, attempt to unite your two stocks, or purchase another in a straw hive unless with the intention of allowing it to swarm; but rather buy a good swarm or two, and stock your depriving-hives in the natural way. We do not think the dimensions you give sufficiently large for stock-boxes. Mr. Woodbury has none less than 13 inches square by 8 inches deep, and prefers a larger size for Ligurians.

Aspect for Bees (*A Constant Reader*).—South-east is the best aspect for bees; but we do not consider it a point of primary importance. Separate the hen from the cock whose comb she picks until the comb has quite healed, and until from becoming [illegible] other change of habit, she has for[illegible] cannibalism.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	DECEMBER 17—23, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
17	Tu	Forced Pinks.	29.661—29.592	43—20	N.	.01	4 af 8	49 af 3	rises	○	3 32	351
18	W	Ember Week.	29.564—29.477	40—15	N.W.	—	4 8	49 3	4 a. 5	16	3 2	352
19	Th	Cypripedia.	29.413—29.368	39—19	S.E.	—	5 8	50 3	14 6	17	2 33	353
20	F	Sun's declin. 23° 27' s.	29.841—29.692	35—23	N.	—	6 8	50 3	27 7	18	2 3	354
21	S	St. Thomas.	29.863—29.766	34—28	N.	—	6 8	51 3	41 8	19	1 33	355
22	Sun	4 Sunday in Advent.	29.795—29.732	34—13	N.	—	7 8	51 3	56 9	20	1 3	356
23	M	Neottia.	29.700—29.441	35—12	N.	.02	7 8	52 3	13 11	21	0 33	357

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 44.7° and 33.6° respectively. The greatest heat, 58°, occurred on the 18th in 1849; and the lowest cold, 7°, on the 19th in 1859. During the period 125 days were fine, and on 113 rain fell.

PRESERVING ICE.

N the winter of 1847, and again in 1848, when I ventilated the first ice-house by undoing the doors in the side-passage, by getting rid of the straw which blocked the passage, and by making a man-hole in the crown of the vaulted-roof over the ice, I made an attempt at thorough ventilation, by letting in a current of air at the bottom of the ice through the waste-drain; but that I could not accomplish, because the waste-drain for that ice-house went straight into a deep sand-bank. From that time I never said a word about ventilating an ice-house through the waste-drain until last week, for two reasons, the first of which was the difficulty of doing it, such as I had experienced; and the second, the apprehension that no reader would then believe the plan was practicable, owing to the wrong notions which existed on the subject of keeping ice.

The one-half of the plan, the top ventilation, was adopted, however, in hundreds of instances, both here and in America, and in every instance the plan succeeded so far. Mr. Fish referred to it and to its success not a month back, and yet the probability of it, the possibility of such a plan succeeding, and the credibility of the writer have been since called in question. Such is the effect of the want of teaching common things in our schools, and such was the reason why I gave a glimpse of the natural history of ice, so to speak, and my own acquaintance with it last week. I shall now proceed to the second head of the subject, and show you how Nature wastes ice on a grand scale. The first head was how Nature preserves ice by a strong current of warm air, by a hot breeze under a tropical sun, or in the full face of an Italian sky.

Neither in the Gulf of Mexico, nor on the slopes of the Italian Alps, does the sun always shine, or the hot breeze dry up every particle of moisture which it comes in contact with; or, in other words, the essentials of the grand secret of preserving ice, by keeping the surface of it perfectly dry, are not always, or in all places, in full play in the lap of Nature. There are dull days, muggy weather, fogs, mists, and rain, and not a breath of air stirring. Each and all of these conditions of the atmosphere waste the ice in Nature's stores at a fearful rate, and men on a small scale imitate the very process by which Nature loses her icebergs, and her 10,000 tons of iced snow yearly, under the false notion that the process will do the very contrary, if they only hide it from the face of day in the bowels of the earth, in an ice-house which is not most thoroughly ventilated, even not ventilated at all. There has not been a single theory since the flood so utterly at variance with the laws of Nature in the matter, as that which presupposed that ice could be kept from melting if the air could be kept from it, unless it was the very next step in the process—that of placing straw between the walls and the ice, the effect of which could only be to accelerate the waste. But the idea of mats or that any textile fabric could preserve ice placed next to brick or stone wall, was four times, if not six times more out of reason, than the idea about the straw. Any thing or substance which will imbibe moisture should never be placed *against the sides* of a mass of ice. The best stock-bricks will soon get wet through and through from the melting of the ice, and from the vapour which rises from the melting: therefore, the best bricks are not one-half so good to build an ice-house with as hard impervious stone, such as the old ice-houses in Scotland have been built with.

To have a column of pent air between two brick walls, as in a hollow wall for keeping ice, is a very feasible idea at first sight, but on second thought it is at the same time a most unphilosophical one, and such a thing should never be. The reason is this: pent air between two dry walls is as thirsty as a baker's oven, and is as capable of sucking in moisture as a dry sponge; the wall next the ice is soon damp when the ice begins to melt; the confined air sucks up this damp till it is charged with it to the point of saturation; and as the ice lowers down by waste, the walls above the ice-line would dry in one-quarter of the time if that volume of damp air had not been behind it; and be it always remembered that so many degrees of damp will waste more ice than twice as many degrees of heat.

If you could disabuse the public mind of the tremendous error that heat is more destructive to ice that anything else, there would be no very great difficulty in converting them to the truth; but as long as that most absurd notion is uppermost, it must be an up-hill work to melt their mood by plain facts—facts such as that saturated air at 50° of heat will melt ice faster than thirsty air would do at 96°.

I have seen ice under the two points, or the 50° and the 96°, under the conditions stated; and where the moist air at 50° impinged on a vault of ice, the whole surface of the vault was dripping fast as a shower-bath, and at the very same moment 96° was playing on another part of the same mass, and it was hardly damp to the touch. Perhaps that is as curious a thing as you have read of this month, and to explain how that could be is another heading in the natural history of ice. It is also the most convincing proof we have from Nature, that the general ideas about keeping ice which prevailed formerly were entirely and altogether wrong.

As icebergs are difficult and dangerous to get at, I shall explain this head of the subject by another reference to the Italian and Swiss Alps, where tourists go from here every season, none of whom will be able to say the account is not true to Nature. In all mountainous countries the snow is drifted in winter into large hollows, gulleys, or valleys, in immense quantities. There it is iced or turned as hard as ice itself—so much so, that if a squadron of cavalry were exercised on the flat surface of a large mass of snow in July or August you could hardly trace their footprints ten minutes afterwards. On a gently sloping face of snow the horses could not stand at all, unless they were shoed for that very purpose. We shall say that mass of snow was only 30 feet deep at the time, and would measure just one acre. The whole of that acre we shall say is exposed to a hot breeze of 96° at the end of July. I said already the moisture of the whole surface under the conditions stated would not damp a cambric pocket-handkerchief. But in other parts of this same mass of iced snow the temperature is barely 50°, and there it is wasting in a shower much heavier than any storm shower ever seen in this latitude. I was never there to know; but the natural history of ice and snow is the same in all countries and climes, and I have said that I had seen the sight under the 96° and the 50° as here stated. Any one who chooses may see the sight in this island, but we shall keep to the route of mountain travellers on the Alps, or midway between the lowest range of remaining snow in August and the limits of eternal snow; and in every one of the wreaths of snow which we there and then meet with, we shall see this sight—a burning sun and a stiff breeze keeping the ice-like surface dry as a feather-bed; and a much lower temperature without sun or wind wasting the same mass, it may be right below the spot we are standing on. That spot is the right place to explain a very common error. Suppose the air was now suddenly chilled, and the breeze was at the freezing-point—32°. Many would say that, of course, would save the ice from melting: so did the breeze at 96°. But the truth is, the air at 32° does neither good nor harm to the ice on the mountain side or in the ice-house.

To explain how the high degree does not melt the surface of the great mass of iced snow, and how the low degree melts it so much as is said, will at the same time explain the cause why ice does not keep better in old-fashioned ice-houses. For the cause of the air being so high as 96° in some places, we shall suppose the mass of snow to have been drifted into a great hollow immediately in front of a run of high rocks which reflect the rays of the sun, as a garden wall reflects them on a Peach-border. And to make the explanation more familiar, we shall suppose the hollow to be in the form of a railway cutting in front of a tunnel, and that the snow fills up this cutting high as the banks. In that form and position the edges at either bank, being the thinnest part of the mass, are melting fast. The water from this melting runs down under the snow, forming little tunnels in the body of the snow. No current of air can rush down the little tunnels because there is yet no opening for it below; but the little tunnel itself is full of air, of course, and the chill from the snow has reduced it to 50°. The air is now saturated, and it becomes a vapour, and when air is vaporised, as one might say, it melts ice faster than a brisk fire. By this time, or by the end of July, the tail of the snow wreath, or that lowest part of it down where the rails would be in a railway cutting, is melting at a rate ten times more destructive than in the little tunnels up along the sides, and the melting there is wasting the mass exactly in the form of a railway tunnel. At first, when the water from the melting of the lower end of both banks meets in the centre of the roadway, it forms a little pool there, the vapour from that little pool soon makes an indent in the very centre of the deepest part of the snow not bigger than a man's hat, the confined vapour caused by the great heat melts the snow right and left and over the top in equal proportions, and in time a tunnel is thus formed as wide and a great deal higher than a railway tunnel; and in a hot day you could not see 10 yards before you in such a tunnel with the misty vapour, and the fast falling of huge drops from every inch of the vault, and the air chilled down to 50°, while 96° are playing over your head, out and up on the surface, between the banks, which surface is just as dry all this time I have just said. I have seen the like of this scores and scores of times, but I never saw a better place for boys to play at ducks and drakes in than a snow tunnel in hot weather. But there is a much grander sight sometimes for boys of another age—the tunnel comes up abruptly on a steep knoll rising from the bottom of the great hollow. The snow next to this rising ground is much softer than where it is far from it, and it goes before the volume of misty vapour faster than before. The tunnel now takes a perpendicular direction, and before it reaches the surface a large portion from both sides of the hollow collapse [illegible] tumble down, the one against the other with a fearfu[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] is grand [illegible]

But the rest of the story is soon told. From the moment this collapse makes way for a rush of wind to pass up the tunnel, the dripping of the sides ceases entirely, the tunnel was ventilated, and that saved it in that direction. Ventilate the ice-house through the waste-water drain and you will see the result on a minor scale.

D. BEATON.

WINTER FLOWERS IN ROOMS.

As some of your readers took an interest in the little hints I sent some time ago to your Journal, on planting bulbs for the ornament of a room in the dreary season for flowers out of doors, I think that, perhaps, they may like to have three or four more hints as to carrying on their culture.

I shall speak in this letter only of such bulbs as are quite unforced, unless where it is otherwise particularly expressed.

First, I must say that many planted on the 11th of September are now showing blossom. Scillas and Crocuses, and especially Narcissi; and as Narcissi grow up often faster than we could wish, I find that the extremely vulgar practice of placing a line of glasses along the window-bar (on the centre bar, I mean, where the sashes meet), so remarkably beneficial to the plants at any rate, that it is not in a gardener's nature to refrain from adopting it. In my plant-case a Narcissus (Double Roman), is just coming out, but I find that forcing increases leaves as rapidly as flowers, unless the plant stands at least 4 inches from the glass. The fine straight leaves look well themselves, however. Red Tulips and White Crocuses are now arranged in groups together for flowering; and these also are being kept moist and very light. My best dishes stand upon the floor in a window which opens to the ground, as thus they obtain a light so much clearer.

The Crocuses are actually indicating colour with at present scarcely any attempt at leaves—the most satisfactory thing that Crocuses can do, as the leaves hereafter will burst and spread as if a bright green sheaf was suddenly unbound. My Hyacinths are growing on in the most stumpy and rooty fashion, much also to my approval; and some of the groups will soon be ready to be parted up with moss, an operation which needs to be performed with extremest care, so as to cover the roots without letting any scraps catch upon leaves and stems.

My planting, however, is by no means over yet. A great many bulbs have been put in this week, including a lot of Messrs. Cutbush's first-rate exhibition flowers, which I hear take all the prizes, and which will, I hope, do great things for me next spring, all the bulbs being of that weighty ivory-hard feel which promises so well for their vigorous growth and blossom. I am planting all Hyacinths now, however, in pots. Water and sand are well for early flowers, but where we want to have first-rate blooms pots are the right things.

Here, however, I must correct myself. I mean no disparagement to baskets and dishes when they are still required, as very many ought to be for February and March. Above I was speaking strictly of the "exhibition Hyacinths," which, whether from Cutbush's, Barr & Sugden's, or Hooper's, the only three sets that I have been planting lately, seem to me this year in wonderfully fine condition. The groups, however, may still go on most flourishingly in blue Hyacinth-dishes (I believe these can be made by Millington of any size to order, at a very small expense). Plain glass milk-pans, soup-plates, and large saucers, zinc dishes also, or zinc trays, for sinking in Mignonette-boxes, or jardinieres, are absolutely invaluable, and outside a window, especially if shaded by a frame of glass in wet or snowy weather, they would form, with some evergreens, a lovely little spring garden. This may be a useful hint to your last week's correspondent who wishes to have flowers showing from the inside of his window. They will also be lovely from the outside too, and if used by any one living in a town, what can be more pleasant than to give a glimpse of real bright spring flowers to those who see so few? Nothing so delights me as filling my garden in the early spring for the passers-by. I so like to see and hear a line of children jumping about and screaming at the flowers!

These groups for dishes and window-bars, I may as well here remark, can now be obtained all assorted properly for immediate use. Messrs. Barr & Sugden some time ago wrote to me for data as to those which I had used myself, and as it was a thing I was most anxious to see accomplished, it is with very great pleasure that I now note the fact, as so many people, of course do not know at first how to assort either colours, or height, or time of flowering [illegible] really pretty and suitable [illegible]

These groups next year will be, I hope, very much more extended; at present I do venture most strongly to recommend such as have been prepared.

They are all made up from whole groups, to which it is concluded nothing will be added; and in sending orders I believe it would only be necessary to mention the size of the box or dish to fill, the colours preferred, and the sort of flowers—that is, Hyacinths and Scillas, Tulips and Crocuses, or Scillas and Snowdrops, which alone are lovely.

I will now only add that in dishes where water only has been used, a little silver sand poured in among the bulbs through a long-eared funnel will keep them steady and upright when they grow up tall; and if Crocuses should be attacked with green fly, which mine have not at present been, a dusting with insect powder will speedily set them free.

When the flowers are in blossom, if the sunshine never falls upon them, they last immensely longer, and every fading flower must be always cut off at once—I mean a decaying flower. Quantities may flag with temporary over-heat or dryness, but they will all recover. Great care must be taken, however, not to break leaves or roots.—E. A. M.

DEATH OF PRINCE ALBERT.

With no ordinary sorrow do we record this event, which will be heard with deep regret by every true-hearted subject of our Sovereign, not only because of the grief and loss that can have no reparation to her, but because also of the high esteem in which His Royal Highness was held.

We are entitled to make this notice if for no other reason than that he was President of the Royal Horticultural Society, the members of which, in common with those of many other associations for the advancement of the arts and sciences, will long remember his energy, judgment, and urbanity.

His Royal Highness was in his forty-third year, being born in 1819, and dying at Windsor on the 14th instant.

ROYAL HORTICULTURAL SOCIETY.

December 10th.

Fruit Committee.—Mr. Graham in the chair. At this Meeting prizes were offered for the best and second best dishes of Black and White Grapes; and for the best and second best three dishes of any variety of Apple and Pear respectively. In the Grape class Mr. William Thomson, gardener to His Grace the Duke of Buccleuch, Dalkeith Palace, exhibited a very large bunch of Calabrian Raisin in fine condition. The flavour of the fruit was rich and piquant, and it was awarded the first prize for White Grapes. Mr. Thomson also sent a bunch of Lady Downes' Seedling whereby to compare the keeping properties of Calabrian Raisin, and both appeared as if they would hang equally well. The Calabrian Raisin has always had the reputation of being an excellent keeper. A remarkable character in the Lady Downes' Seedling, exhibited by Mr. Thomson, was its possessing so marked a flavour of the Muscat. This was apparent to every Member of the Committee; and the question was suggested whether or not it had come from a Vine grafted on a Muscat, and thereby acquired that flavour. In this class Mr. Mackenzie, of Brighton, exhibited Marchioness of Hastings, which produces large bunches, and is a very inferior Grape in regard of quality. Mr. R. W. Craik, gardener to F. T. Rufford, Esq., Prescot House, Stourbridge, sent fine bunches of Black Morocco, and these took the first prize in the class of Black Grapes. He also exhibited a bunch of what was named Black Frontignan, but which was in reality the Black Morocco also. Mr. Graham, of Cranford, again exhibited bunches of his Cranford Muscat, a small highly flavoured Grape, which has the property of not cracking like the Chasselas Musqué. The bunches had been cut some time, and the berries had become somewhat shrivelled and were very finely flavoured. These bunches had been ripened in a house without any fire heat.

In the competition for Apples the first prize was awarded to Mr. John Newton, gardener to G. J. Graham, Esq., East Lodge, Enfield Chase, for Cornish Gilliflower, very full-flavoured and rich. Sam Young, a small, round, and flattened russetty Apple, with very firm and tender flesh, very juicy and with a fine flavour. Ribston Pippin, very good. The second prize was awarded to Mr. Cunningham, gardener to the Bishop of London, Fulham Palace, for Blenheim Pippin, very good and well flavoured. King of the Pippins, also very good; and a variety of Russet called Sykehouse, but which was not so. It is a good Apple, but the sort could not be identified. Mr. R. W. Craik exhibited in this class also. The sorts were Blenheim Pippin, Wyken Pippin, and Cellini. These being grown in a more northern climate were yet immature, but were excellent examples of the various kinds.

Mr. John Hodge, Nurseryman, St. Austell, Cornwall, sent dishes of Tom Knight, Smith's Pippin, and a variety of table Apple unknown, but these were not equal in flavour to any of the others. Mr. Kinghorn, Nurseryman, Richmond, sent dishes of Adams' Pearmain and Rosemary Russet, both very beautiful examples of these excellent varieties. C. W. Strickland, Esq., Chairman of the Yorkshire Local Committee, sent specimens of Chapman's Ribston, a sort that was exhibited before the Committee last year, when it made a very favourable impression by the excellence of its quality; but this season it was very much inferior in flavour, and evidently had not acquired its true flavour. Mr. Strickland also sent a very large green Apple without a name, which was considered by the Committee as a very valuable kitchen Apple. Chas. C. Temple, Esq., High Ackworth, Pontefract, sent a very handsome large Apple of good quality, supposed to be a chance seedling. It has a tender flesh, crisp, briskly flavoured, and a fine aroma. The Committee requested that it might be sent again. R. T. Head, Esq., of Alphington Road, Exeter, sent specimens of a large seedling Apple of good quality, but it was not considered equal to many others already in cultivation.

The only exhibition in the Pear class was sent by Mr. D. Cunningham, gardener to the Bishop of London, Fulham Palace; but as no names were sent with the fruit they were disqualified. They were excellent specimens of the sorts exhibited, and consisted of Beurré Diel, Beurré de Rance, and Winter Nelis. Mr. Cunningham also exhibited three varieties of Chestnuts grown in the grounds at Fulham Palace, which were distinguished by the names of vesca, pumila, and media. The best was that named vesca, the fruit being rounder and better filled than that of the others. He also exhibited a dish of the Dutch Medlar. Mr. Cunningham also sent two punnets of Mushrooms—one of the common garden Mushroom, and the other with a thinner cup and tough slender stalk, and the colour quite white. Mr. Cunningham's object in exhibiting these was to show that inferior and in some instances poisonous Fungi may be introduced in the soil used for covering the Mushroom-beds.

G. W. Wilson, Esq., of Gishurst Cottage, Weybridge Heath, exhibited fruit of Chaumontel ripened in an orchard-house. The fruit was covered with a fine, glowing, cinnamon-coloured russet, and was very handsome; but the flesh was coarse-grained and crisp, though with a high aroma and good flavour.

J. B. Haig, Esq., of Chapel Street, Belgrave Square, exhibited the fruit of Bertholletia excelsa, the tree which produces the Brazil nuts. The fruit consists of a large wooden capsule filled with a great number of the triangular seeds, which lie one over the other, and are attached to a central placenta.

Floral Committee.—The dark days of December do not afford many subjects for consideration in the floral way; and consequently the Meeting, so far as new flowers were concerned, was well nigh a *dies non.* Other important matters were, however, discussed and arranged.

Messrs. Carstairs, of Edinburgh, again sent blooms of their white tree Carnation, the Bride, which promises to be a useful flower.

A rather pretty plant came from Mr. Potter, gardener to Mr. Colvin, Little Beelings, Woodbridge, Suffolk—a species of Parochetus, with a leaf very like an Oxalis, and with a light azure blue papilionaceous flower. It was not, however, in sufficiently good condition for an award, the flowers being nearly all over.

Messrs. E. G. Henderson & Co. sent a fine plant of Imatophyllum Gardenianum; and three varieties of Epiphyllum truncatum, grafted as half standards and forming pretty objects. Also Crassula lactea.

From Mr. Standish, of Bagshot, came one of the new Japanese Chrysanthemums—laciniatum, having the florets curiously divided and fringed, and likely to be of use in hybridising.

A pretty little plant of Rhododendron Princess Royal was exhibited, originally introduced by Mr. Veitch. Its very peculiar habit of blooming and the shape of its flowers, reminding one of some of the Trumpet Honeysuckles, make it interesting. One or two foliaged plants of no great merit were sent by Mr. Bull. And lastly, the most interesting plant exhibited, which came from Messrs. Veitch & Son—viz., a fine plant of Angræcum sesquipedale, a very fine Orchid from Madagascar, so often mentioned by the Rev. Wm. Ellis in his interesting accounts of that island, from whence we may now look forward under its new king for so much. The country will be opened to European enterprise and science; and doubtless our English cultivators will not be behindhand in sending there. For this a First-class Certificate was awarded.

PINE APPLE CULTURE.

(*Continued from page* 87.)

LIST OF VARIETIES—*Continued.*

The Black Prince.—Habit, tall-growing. Leaves, long and medium in width. Fruit, very large, pyramidal in form; dark orange-coloured when ripe. Flavour good. An excellent variety. Raised at Foxholes, the seat of J. Entwistle, Esq., near Rochdale, in Lancashire. Supposed to be a hybrid between the Ripley Queen and the Blood-red Pine. I have seen fruit of this very handsome Pine Apple 16 inches long, 6 inches diameter near the bottom, and weighing between 7 and 8 lbs. avoirdupois.

Smooth Cayenne.—Habit, tall-growing. Leaves, long and broad. Fruit, very large, rather globular in form; yellow when ripe. Flavour excellent. This fine variety was imported from Cayenne, as its name imports, many years ago, and is now cultivated in many places. The finest and largest number of it is grown, I believe, at Chatsworth. I once saw there a pit 100 feet long filled entirely with it all in fruit, none of which I judge would be less than 7 lbs. weight.

Prickly Cayenne.—In habit much similar to the smooth variety, but upon the whole it is an inferior variety.

White Providence.—Habit, tall and stout. Leaves, rather long, very broad, and covered with a white powder. Fruit, extra large, rather globular in form. Pips broad and flat. Colour dark yellow when ripe. Flavour medium. The fruit is very juicy, and the scent of the fruit is powerful. This variety is now well known, and highly and deservedly esteemed. With the exception of the Black Jamaica, its flavour is equal to any other when properly ripened. However, it is not considered a good sort for winter.

Trinidad.—Habit, tall-growing. Leaves, long and narrow Fruit rather large, handsome in form, and well-flavoured, dark yellow when ripe. When this kind was first introduced from Trinidad, marvellous reports accompanied it. Amongst the rest it was mentioned that it would reach the extraordinary weight of 20 lbs. It has proved, indeed, to be a fair variety, but, generally, I may say it has disappointed the cultivators.

Black Antigua.—Habit, tall growing. Leaves, very long and narrow. Fruit, medium-size, globular in form. Pips, large, broad, and flat. Colour, when ripe, dark yellow. Flesh nearly white. Flavour when just ripe most excellent, but it keeps badly. This good old kind has nearly gone out of cultivation, chiefly because of its straggling habit, and frequently coming up with the fruit deformed. Yet when it shows well and finishes well, few sorts can surpass it.

Enville.—Habit, rather tall, but compact in growth. Leaves, long and broad at the base, and covered partially with a white powder. Fruit, rather large, pyramidal in form, and bright yellow in colour. Flavour good in summer, but indifferent in winter. A very handsome variety raised from imported seeds at Enville Hall, [illegible] the Earl of Stamford. This kind is [illegible] tha[illegible] there and [illegible] cultivated perhaps on [illegible] account

[illegible]

shaded with purple in colour. Fruit, medium size, pyramidal in form, and dark blood-coloured. Flavour moderate. This variety is chiefly grown because of its singular colour, which pervades even the interior flesh. In all other points it is very inferior.

I might add several other varieties that were cultivated some fifty years ago. Such, for instance, as the Brown Antigua, the St. Vincent, the Sugarloaf, the Havannah, and others; but it would be superfluous, for they are all now obsolete—gone out of fashion and cultivation. The striped varieties are now cultivated as beautiful-foliaged plants for ornament only.

SOIL.

The Pine Apple will grow in almost any kind of soil; but experience has proved that if the soil is too light the plants will run into fruit before they have attained their full growth, and hence the fruit will be small, and not so well flavoured; whilst on the other hand, if a rich, strong, heavy soil is used, the plants will continue growing for years without fruiting. It is evident, then, that a soil of medium quality is the kind that should be made use of. The principal part of the soil I have used is turf from a sheep-pasture pared off 3 inches thick, and laid up in a long ridge-like heap not more than 2 feet or 3 feet high, and 4 feet or 5 feet broad. This heap should be turned over four or five times during the year. This turning over destroys weeds, and exposes every part of the soil to the ameliorating influences of the atmosphere. The best season for getting this turf is summer, for then it is dry, light, and easier to cart home.

The next article I use is leaf mould. The leaves to make it of should be collected in the autumn soon after they have fallen. I prefer Oak or Beech leaves, because they are longer in decaying, and, consequently, give out nutriment longer than more sappy leaves. Collect them together and lay them in a heap not too thick, and throw over them a thin layer of light soil to prevent them being blown about. At the beginning of the year turn over the heap, and if any part of it is dry, wet that part with rain or soft water. Repeat the turning every three months, and by the end of the year it will be fit for use.

The third ingredient I use is dung. There are several kinds, such as deer's, sheep's, horse, cows', poultry, and even swine's dung, all of which have been recommended by different writers. For my part, I was always satisfied with any one of them that I could get: hence horse dung that I had used for Cucumber and Melon-beds being handy and half ready for the purpose satisfied me well. The fact is, any dung is enriching, though some are more so than others: hence if deer or sheep's dung could be obtained in sufficient quantities, I should prefer either of them to hotbed dung, though the latter is good enough, and will grow the Pine Apple excellently.

In addition to these three principal articles, I recommend the addition of a small quantity of quicklime and sharp rough sea sand, or if that cannot be had, then use some other kind of sharp sand. I have used charcoal broken small with advantage.

The various articles having been collected and duly manipulated, I then mix them together at the times they are wanted, in the following proportions:—

Six barrowloads of decayed turf.
One barrowload of leaf mould.
One barrowload of dung.
One peck of charcoal, broken small.
One peck of sharp sand, the dust sifted out.
One peck of quicklime.

Mix these all thoroughly together in a rather dry state, and lay the compost in a warm shed to become aired. Do not sift the compost at all excepting for small suckers and crowns, and even for them use a wide-meshed sieve. If used too fine the compost will run together and be too compact for the fine roots to penetrate.

There is yet another article that is indispensable to successful culture of the Pine Apple, and that is the material for drainage.

Some authors recommend rough sand for this purpose; but I prefer the old-fashioned drainage—broken pots. These should be in three sizes, the first large enough to cover the holes at the bottom of the pots (though if oyster-shells can be had they answer for that purpose still better, for they afford nutriment to the roots). The second size should be as large as a pennypiece; and the third about the size of horse beans. These should all be ready in sufficient quantities before the potting season comes on. In preparing them, if the broken pots are dirty, I should throw the crocks into a tub of water and scrub them well with a rough broom, and then lay them somewhere to dry.

[To be continued.] T. Appleby.

AN EASY MODE OF REDUCING BONES TO POWDER.

Every one wishing to employ bones for manure must have been more or less troubled in reducing them to a state of powder, or fragments, suitable for the purpose. Even treating them with sulphuric acid so as to convert them into superphosphate of lime, is an uncertain and awkward process for those who are not provided with appropriate utensils. A much more simple, and one devoid of hazard, has been suggested by an American gentleman, as stated in the following extract from the *Boston Cultivator* :—

> "James S. Grennell, Esq., of Greenfield, practises dissolving bones by a method which seems worthy of notice from its simplicity and convenience. Casks having each but one head are provided; a layer of bones 6 inches or 7 inches thick placed on the bottom; then strong, unleached wood ashes are spread over the bones to the thickness of 2 inches or more. The casks are filled in this way, taking care to have a pretty good thickness of ashes at the top to prevent the exhalation of ammonia. The process of thus packing the bones goes on through the season, as ashes accumulate in the house, and they remain in the casks till spring, when the casks are emptied, and the bones are found to be generally well pulverised, or so soft that they can easily be broken as fine as desired. The mixed bones and ashes are excellent manure for most crops, and especially for fruit crops."

The power of the wood-ashes to reduce the bones to a powder must be owing to the caustic potash which they contain: therefore, as it would be difficult in this coal-consuming country to obtain wood-ashes in sufficient abundance, the cultivator desiring to pulverise bones for manure might sprinkle them over with potash in powder; or mix some potash with charred vegetable refuse, and pack this mixture in layers, alternating with layers of bones, as directed by Mr. Grennell.

We are quite aware that by thus using potash the phosphate of lime in the bones is converted into phosphate of potash; but we are also aware that this salt in some soils is more useful as a manure than phosphate of lime.

Professor Johnston observes of the phosphates of potash that they are "perhaps very generally present in the soil in minute quantities; and there is every reason to believe that could they be applied to the land in a sufficiently economical form, they would, in many cases, act in a most favourable way upon vegetation. They are contained in the urine of carnivorous animals, and in many other animal manures; and to their presence a portion of the efficacy of these manures is to be ascribed."—(*Lectures on Agric. Chemistry.*)

SHORTT'S PLAN FOR THE PRESERVATION OF POTATOES FROM THE DISEASE.

This plan of laying down and moulding the stems of Potatoes all but a few inches of the tops is as old as the hills; for the washing of the mud from the sides of their native hills, by storms and tempests, did the same thing from the beginning; and under cultivation the plan was adopted, practised, published, criticised, and commented upon many years before the first appearance of the Potato disease, in the volumes of "The Gardener's Magazine," from 1830 to 1834, but I forget the exact time.—D. Beaton.

[Mr. Hayward suggests the plan in "The Gardener's Magazine" for 1833, page 323.—Eds.]

I take up The Journal of Horticulture this morning (Thursday), and open upon Mr. Fox's letter. I find that he charges me with, 1st, "rashly and publicly condemning" Mr. Shortt's plan before fully comprehending the directions; to which I reply that his penetration is very obtuse indeed, else he would have perceived that my letter is only a simple record of an experiment, conducted and finally carried out with the strictest impartiality. He charges me with, 2ndly, total misapprehension of the instructions which he describes as so "plainly and lucidly expressed." My reply to this is, Take another look at the instructions, Mr. Fox, because, what does this mean—"If I understand it aright the principle is, &c.?" Now, this admission of a doubt as to his comprehension of the principle, weakens, nay, stultifies his charge of my misapprehension.

I find that Mr. Mildford admits that there has been some disease this year, even on the fine crop at Coaver, under the system carried out by Mr. Shortt himself. Let them give us the weight, per acre, of their own crop—not hearsay reports as to the "thorough and undoubted success" of the system in Norfolk. This is only what is just to all of us, and would carry conviction with greater force than baseless charges of misapprehension.

I can well understand the neighbourly feeling that has prompted Mr. Fox to break a lance in defence of his friend; but, as he has not personally tried the experiment, he cannot be admitted as a champion. Let me give him "A Renfrewshire Bee-keeper's" quotation in this week's Journal :—

"Facts are chiels that winna ding,
And daurna be disputed."

As Mr. Fox has exonerated my employer from misapprehension, I beg that his name may be no more mentioned in this matter. I prefer fighting my own quarrels with my own weapons. The injustice of Mr. Fox's charge against Mr. Sandsy is so palpable, that I bitterly regret ever having mentioned his name.—N. H. Pownall, *Holme Pierrepoint.*

TREATMENT OF FROSTED PLANTS.

On perusal of your Number of the 26th November, I was much amused at the plain avowal of my neighbour "N. H. P.," as to his troubles of the night of the 15th inst. It is an old and a worthy saying, that simple confession is good for the soul; but in this instance there was no cause for so full a confession of his misfortunes, since so many, especially of the fairer portion of your readers, will be ready to exclaim "N. H. P." must be little versed in the weather to be totally unprepared for so severe a frost as that of the 15th inst.—viz., 12°. It was a favourite saying of a gentleman with whom I lived in Cambridge, "A gardener should from the 1st of November to the 1st of May sleep with one eye open." Now, this does not appear to have been the case with "N. H. P.," happy man!

"His slumbers deep, his cares but few,
He slept all night, no changes knew."

I can readily imagine his appearance on first hailing that chilly morn. No time for reflection or thought, prompt action was the order of the day; and kindly did Fortune smile upon him, in that before his fires had become brisk enough to raise the temperature to that climax of gardeners, 32°, bright Phœbus did not dart forth his beams to dispel the thick coating of frost on the glass, in which case he might not have come off scot free.

I do not condemn the practice of raising the temperature by fire heat, because all must be aware the longer plants are subjected to a temperature so low, the more likely are they to be injured; with me it has always been understood prevention is better than cure. It may be that in the few miles separating "N. H. P." and myself there may have been great difference in the temperature on that night; at 10 P.M. here it indicated but 33°. Not safe, said I, so I had the fires lighted, and before 11 I could comfortably turn in to undisturbed repose, safe in having taken the view of matters, nationally ours, that being well fortified, it is far easier to keep an enemy out of the camp than to oust him when there.

I need not trespass further on your pages than to illustrate the ill effects at times arising from such measures as those of "N. H. P." Some years since, I cannot tax my memory with the exact date, a friend living close by me was fixed in a like dilemma, and very naturally flew to fires as his remedy. In his anxiety he asked my advice on the subject, when I suggested the propriety of raising to 32°, and immediately applying a copious syringing with cold water. This he could not see to be right; but after arguing the point somewhat further, he agreed to test it by syringing one house and leaving the remainder to thaw by action of fire. Unfortunately for his ancient notions, as frequently is the case after frosty nights, then occurred one of the bright mornings when the sun breaks forth in all its splendour. It needed no nicety of eye to discriminate between the two methods; the superiority of the cold bath to the chilled and frozen pets soon became apparent in the glossy-green leaves, against their dejected-looking neighbours, closely resembling in colour our poor Dahlias under similar circumstances. I do not wish for a moment to condemn or to impute mismanagement to my friend, human nature is prone to err, I would only suggest that should he again have the misfortune to be placed in the same fix, to try the invigorating effects of a cold bath for his invalids, and to hope these few lines may be of service in extricating some one of my brethren from a like dilemma.—O. B.

[We inserted the communication without any comment in the expectation that it would elicit some observations from other correspondents. "O. B." is quite right. If plants are frosted shade them from the light, let the temperature rise, if possible without fire heat, to 32°; then syringe with water not higher in temperature than 35°, and continue shading the plants for an hour or two afterwards, or all day if the sun shines brightly.—EDS. J. OF H.]

POURING WATER ON FLUES TO REDUCE THE TEMPERATURE.

WOULD the Editors inform "E. D." whether any harm arises to her plants at this season by pouring water over the flues when she finds the temperature of her house many degrees warmer than is required for her plants? An answer will set at rest a dispute between a gardener and his mistress, and greatly oblige an old subscriber.

[We have no love to be arbitrators in any case, and least of all when one side only is presented to us. However, we may say, in general, that unless in extremely strong flues, and extremely high tropical heat required, we object to wetting flues at all; but would obtain atmospheric moisture by means of evaporating-basins. So much for general cases. In houses moderately heated, we would object to wetting a flue at all at this season. When too much heated we would object still further, as a burning vapour would be thrown among the plants, worse even than air too much heated. We should just put the fire out, and give air freely if the weather was mild, and if cold and frosty give air at the top of the house only, and neutralise the dry atmosphere by sprinkling the paths and stages. If such extra dryness of the atmosphere rendered such sprinkling necessary. We would do this, even if there were no danger of hurting the flue, cracking it, and letting out effluvia in which plants could not live and thrive. Many a good flue has thus been injured, and many a crop been parboiled—that is, when the flue was very hot and water was used for cooling it. We would never throw water on them at all.]

WRITING ON ZINC LABELS.

I CAN give you a better (because a more expeditious and an equally efficacious) method of cleaning zinc labels than that named at page 163.

Nitric acid one part, water three parts. Wash the label with a roll of linen (taking care not to touch the fingers with the mixture), and when clean place immediately into cold water. Wipe carefully dry.

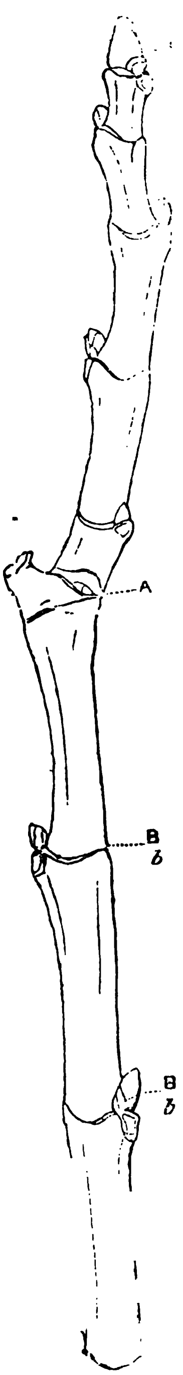
A far better ink (because so much cleaner to use) is to be bought at any of the seed-shops for 6*d*. a-bottle. To be used with a quill pen.—H. R.

FIG TREE PRUNING.

OF all the fruits which we cultivate in Britain, the Fig tree seems to be generally least understood. This is probably owing to the peculiarity of its mode of bearing, and the abortive luxuriance consequent upon the too free use of the knife, to which it is frequently subjected in order to bring it into regular shapes. No tree requires a smaller degree of pruning; and the old adage that "a pruned Fig tree never bears" is literally a truism.

The Fig tree is distinguished by this peculiarity—that in the course of one season it produces, upon two distinct sets of shoots, two crops of fruit. The Figs which appear when the first flow of sap takes place are those which alone ripen (upon a wall in this country) generally in September; those which are produced afterwards do not come to maturity in our sunless climate. But under glass, assisted by artificial heat, they succeed perfectly. It must, therefore, be the object in managing the Fig tree, as to [illegible]ing, to secure the greatest possible amount of moderately strong, short-jointed, and well-ripened wood, and to remove by degrees from the tree those shoots [illegible] have become old and naked. This must never be [illegible] ess of severity, but must be [illegible] work of watchfu[illegible] progression. Roo[illegible] [illegible] ll always be foun[illegible] liary, and confini[illegible] [illegible] hin [illegible] imite[illegible] [illegible] ys beneficia[illegible] [illegible] shown by [illegible]

not the form best suited to induce productiveness, unless modified by recurving the points of the branches. It is but too common to see Fig trees mere aggregations of suckers; the branches emanating from the collar of the plant at the ground, and not being confined, as in other trees, to a single stem. The great objection to the fan-shaped training for the Fig is the excessive luxuriance which those shoots which approach nearest to a vertical position acquire; and the consequent unproductiveness of that most valuable part of the area upon which fruit trees are trained—namely, the top of the wall.



We have observed that in the open air, in this country, only one crop of fruit ripens, while under glass we have the power of bringing to maturity the second crop, which always ripens in warmer latitudes. It is, therefore, obvious that, as the results to be aimed at are different, so must our treatment vary. For a crop of Figs upon the open wall, then, our object must be, as far as art is available, to increase the number of embryo Figs which are developed from last year's branches with the first flow of the sap. In order to effect this the recommendation of Wickham is good, which we have confirmed in our own practice. It is, to "rub off, as soon as they can be discerned by the naked eye, all the Figs which are produced after midsummer on the same year's shoots." These Figs Mr. Wickham calls (not inaptly) "sterilising incumbrances," and the effect of removing them is, that at the base of each fruit so removed another embryo is formed, which will produce a fruit that will ripen in the following autumn.

The figure represents a shoot of last year. The first Figs were produced on wood of the previous year (which is not shown). The first growth, previous to midsummer, extends up to A; at the joints B B B a second crop was formed, which was removed, and other embryos are now formed, *b b b* [not well represented]. From A to C is the second shoot, showing also Figs for the first crop of next season. Thus by this mode we succeed in getting a show of fruit which will come to perfection along the whole growth of last year by merely removing that which in our climate no skill could have brought to maturity.

Mr. Knight found that whenever a branch was extending with too much luxuriance, pressing it between the finger and thumb till its soft cellular substance was found to yield (not letting the nails come in contact with the bark), had the effect of repulsing the sap, and in consequence a fruit was formed and ripened at the base of each leaf. These Figs were formed upon our shoot (see figure), and with sufficient heat would have ripened, but they were taken off, as shown on the shoot at B B B. The reader will probably understand from this the application of the management under glass and externally.

It now remains to say a few words upon the training and formation of the tree. Horizontal training answers well for the Fig; and Mr. Knight has recommended training them with a tall single stem and radiating branches from the top of it, in a stellate form. We think this is open to the same objection as fan-training—namely, the superior vigour of the most vertical branches, as compared with [illegible] represented car[illegible] We also venture to opine that training up [illegible] gle tall stem [illegible] horizontal branches at the top and then training down perpendicularly would be preferable, as calculated to balance the tree better. It is quite true that we seldom see Figs trained otherwise than in the fan mode, and that such trees, when the points of the branches are recurved, and they are otherwise well managed, frequently produce fine crops; but such are exceptions to the general rule. In forming a horizontally-trained tree it must be headed down within 18 inches of the ground to three buds, two of which must be trained horizontally right and left, and the centre upright, to be again headed back to form future tiers of branches. Thus it will appear that the use of the knife in managing the Fig tree should be very occasional; the cuts may be "few and far between." A vigilant eye and the finger and thumb may do nearly all the pruning requisite.

Fig trees in pots may be thus managed without any use of the knife; frequent stopping, pendulous training, and a rich soil will do all they can be desired to do, with root-pruning, which is of much consequence to their success. Late in the autumn they may be annually turned out of their pots, and the roots pared (to the thickness of an inch) all round with a sharp knife, and then repotted in strong rich soil. This plan was long practised at the late Lord Harewood's seat in Yorkshire with most successful results.

My friend Mr. Rivers, of Sawbridgeworth, who is one of the most able and intelligent of cultivators, has succeeded perfectly well with Figs in pots, by allowing them to root during their growth into the open soil and stimulating them with a rich surface dressing. When the fruit is ripened the roots are cut off and their surface dressing cleared away. For successive crops the trees undergo again and again the same process.

Standard Figs are now seldom met with, unless in some very favoured locality. The finest fruit we have seen lately was during the past autumn on some trees at Osborne House, the seat of Her Majesty. They only require a dry bottom and a genial climate. In such places the pruner may consider his "occupation gone," unless the branches (very occasionally) become too crowded.—H. Bailey, *Gardener, Nuneham.*

SPERGULA PILIFERA A SUCCESS.

Scarcely anything in the horticultural world has elicited so many and so diverse opinions as this little plant. Its distributor, Mr. Summers (Spergula Summers, as "Nickerbor" facetiously styles him) believes it will effect a revolution in flower gardening, as a substitute for grass lawns. The very numerous gardeners who have succeeded with it are of well nigh the same opinion; while its detractors (and I am sorry to confess they are not few) are loud and positive in their condemnation of the "little humbug," as they call it.

To test its merits. In the first week in October, 1860, we had near upon 2 cwt. from the Crystal Palace Nursery. I had a notion that for one place in our garden it would answer admirably. The sort of place most readers of The Journal of Horticulture will understand, when I call to their remembrance the eloquent description given of it by Mr. Beaton, when describing the Crystal Palace Gardens at the visit of the Emperor and Empress of the French. See The Cottage Gardener, Vol. XIV., pages 67 and 68.

In the year that this was written our flower garden underwent reformation, and one of Mr. Beaton's ring-beds was introduced into the design; only ours is a diamond instead of a circle, a vase stands in the centre. I endorse all that Mr. Beaton says respecting them, both æsthetically and economically, with one exception—the centre of grass inside the ring. Mowing is out of the question, a boy and shears have to keep the grass under during the summer. This was a great draw on our labour, and I determined to try Spergula pilifera.

In Mr. Fish's criticism of the Crystal Palace Gardens, Vol. XVII., page 42, he takes strong objections to these beds of Mr. Beaton's for the very same reason that we wanted a substitute for ours. I am thankful to say Spergula is that substitute, much more effective as a green floor, and it needs no attention, except you may call that attention, when, on the recommendation of Mr. Summers to roll it, we (my garden lad and I) consolidated it by a sort of North American Indian war dance, an eccentric variety of movements that would have irritated the nerves of a musician outrageously. We contrived to do it when no one was near.

To those gardeners who want their Grapes as soon as the Vine is planted, Spergula will never be a favourite. A piece of ground planted with Spergula (especially if from motives of economy you make the spaces between rather wide) does not look "eyeable," as a friend of ours says. But, patience, my impetuous brother; do not plant too wide, and do not expect great results the first year, and I think you will be satisfied in the end.

It is amusing to hear the critiques of visitors who have seen our Spergula. In the winter and spring, "I don't think a deal of Spergula."—A smile of pity for our credulity. In summer, through negligence in watering, it looked a bit yellow;—"Hm, Spergula came out with a great name, but I should think you're heartily tired of it."—This, with a look of superior wisdom, and I-told-you-how-it-would-be sort of air. Autumn, "What a beautiful green Spergula is! such a contrast to the yellow colour of the grass! How do you like it?" Well, we answer, so much so, that we are going to plant as much of our grass plot as we have Spergula to do it. "Ah, I rather like it."

In any garden, where on the sloping banks the grass grows coarse and patchy, or as centres for ring-beds, or as divisions between beds in a small geometrical arrangement, or as a substitute for grass in the little front gardens attached to houses at the outsides of towns where a bit of green is so striven for, Spergula is the thing. "The right thing in the right place."

Our mode of operation is: Dig the ground, level it, tread it, level again, break the Spergula turf into pieces about the size of your thumb (mine from much use is more broad than elegant) and press into the soil, make the distance between the same size as the bits of Spergula, throw on some sifted soil, leaf mould, or refuse potting-bench stuff, flatten with the back of a spade, and the job is done.

This applies only to pilifera, saginoides I have not tried. Ours is light soil, and our instructions say saginoides is better adapted to light soils than pilifera, pilifera being more at home on the stiff clays.—Wait.

MANAGEMENT OF WINDOW PLANTS IN WINTER AND SPRING.

I have a few Geraniums, Fuchsias, Calceolarias, &c., which, for want of a better place, I grow in my window, both inside and out. For the last few years they have bloomed so late that the frost has destroyed the bloom prematurely. Will you be so kind as to tell me whether it is my fault or not? I serve them as follows:—In autumn I take them out of the pots, prune root and stems, and return them to the pots again afterwards. I put them in a dark corner of the room. In spring I again repot them, and water them. If this is not the way will you tell me the right, and likewise the proper compost I ought to use?—A Constant Subscriber.

[We would give more definite advice did we know what kinds of Geraniums, Calceolarias, &c., you do grow. In the meantime we can have no hesitation in advising you to obtain "Window Gardening for the Many," which by post will be 10*d.*, and then we have as little hesitation in stating that your practice is just the best you could take to obtain late flowers, and but few of them.

In the first place it is not a good plan to cut the stems of a plant and to prune the roots and repot at the same time. It is best, when pruning is needed, to prune first, and under your circumstances when the buds have broken, either repot into smaller pots, or allow the plants to remain in the pots, and either pot or top-dress in the spring. In either case plants might be a little shaded after potting; but keeping plants that are growing in a dark corner of the room in autumn and winter, and giving them more pot room in spring, must give such an impetus to mere extension, that we do not wonder such plants bloom late. All plants growing should have as much light as possible in winter.

To be more precise, we will notice the three kinds of plants more particularly. First, then, with respect to Scarlet Geraniums. We have some four plants of Tom Thumb that are the admiration of every one who sees them, as the centres of beds in summer. Well, these plants have been in the same pots, summer and winter, for more than a dozen years. They are set anywhere free from frost in winter, and sometimes by Christmas they have not a single leaf on them larger than a fourpenny-bit. At this time they are kept rather dry. No pruning to speak of is given them, but the shortening of any shoot stronger than the rest, and nipping off any little bit that is showing signs of weakness or decay. About March or April a little surface soil is picked off carefully, and a rich top-dressing is given. The plants are put out of doors under protection in April, and generally from June to the end of October they are a mass of bloom, for in dry seasons the plunged pots can be watered, and in wet, dull seasons the rain is thrown past the roots by the width of the head and foliage. Were it not for the expense and the housing, such plants would present a far more magnificent display than those either young or old turned out in the open ground. For fine display from Scarlets, then we advise adopting this plan, which Mr. Beaton calls the Harry Moore system.

But with florist and fancy Pelargoniums, especially the former, it is necessary to prune after the wood is well hardened after flowering. The plants should stand in the sun afterwards until the fresh shoots are from half an inch to an inch long; then if the pots are rather small the surface soil should be removed and fresh surfacing given, and the plants obtain all the light possible. If the pots are large for the plants, then after the buds are broken you may carefully shake the soil away, prune the roots a little if very straggling, and repot in much poorer soil, and smaller pots; and keep shaded from bright sun for a week, and then gradually inure them to all the sunshine they can get. If you want early blooming these should not be shifted again at all; but, if you want good plants as well as bloom, give them one size of pot larger in March or April, and pot hard and firm all the time, never moving the plants from the light. The dark corner will be ruinous to them. They will stand no darkness, and no rough treatment, like a Scarlet Geranium deprived of most of its leaves.

Then whether the Calceolarias be herbaceous or shrubby, if in pots, we would prefer pruning a little in autumn, keeping them in the same pots all the winter, and repotting into larger pots in March or the beginning of April. These, too, must have light in winter to bloom early. When they are kept in a darkish place they must also be cool: hence we last season had Calceolarias by the thousands shut up from all light for six weeks; but then it was just like one night to them, as during all that time the temperature in which they were was not more than a few degrees above the freezing-point. Had such plants been kept in a room, and in a dark corner of it, and the heat of that room ranging from 40° to 60°, then we should have expected the shoots to be such poor wire-drawn weak affairs that the bloom could only be expected to come when other people's plants were nearly over as to blooming.

Exception as to potting must be taken in the case of young herbaceous plants raised from seed in August; they, too, must have all the light possible, and may need repotting at Christmas, and again the beginning of March.

Fuchsias established in pots, and the Scarlet Geraniums ditto, are the only things you mention that would do in a cool shady corner of the room in winter; but though the Fuchsias may be partly pruned in, they should stand in the pots in which they grew all the winter, and be fresh potted, and brought to the light as the buds break in spring. Where there are no means of giving strong heat to young plants, these old plants so managed, are the best of all for giving abundance of early bloom to amateurs and window gardeners. The keeping and management of such Fuchsias has received great attention in late Numbers.—R. Fish.]

CULTURE OF PRIMULA FARINOSA.

I am well pleased to find that the number of those who cultivate our native plants is on the increase, and that your correspondent "W." is trying to grow Primula farinosa, with which, I have no doubt, your correspondent will be successful. A riend of mine, who is a cultivator of many of our British plants, s very successful with it. He grows his plants in pots, in a cold rame, without any protection except in frosty weather, when the ashes are put on. There they seldom fail to flower well and re very healthy. His old plants were collected in Craven, in he neighbourhood of Malhamtarn, and are grown in the limeone soil of that romantic district. During summer the plants [illegible] weeks together without water; at other times they get a aking during wet weather. When in flower they are shaded r two or three hours every day during intense sunshine, which [illegible] them to continue longer in blossom and the colour [illegible] [illegible] correspondent "W." might [illegible]

white and others with deep crimson flowers, and save seed from them; by this means a great variety may be obtained.

There is a pink or red variety of Achillea millefolium (Yarrow or Milfoil) that is sometimes met with in gardens. I do not mean the red variety that is often found growing wild on the banks of our Yorkshire river Ouse; but a much taller variety growing upwards of 3 feet high, with large bunches of flowers, which strike the eye at a long distance. I have only seen this variety once, some time since. Can any reader of The Journal of Horticulture tell me the name of any nurseryman that has it for sale, or where it may be got?—Rustic Robin.

ŒNOTHERA MACROCARPA AND GAZANIA SPLENDENS AS BEDDING PLANTS.

I would, with the assistance of the gentle readers of The Journal of Horticulture, devise a new bed upon this very principle. I would endeavour, with the assistance of the same, to replace an old, a general favourite—a very lady's favourite, in its former place upon many of our lawns, from which it has been taken with the wish for a better, a more pleasing substitute. A wish which, notwithstanding oft-expressed desires to have it replaced, has never been realised. I allude to the old favourite evening Primrose (Œnothera macrocarpa). And its companion—the plant which is to be in such close companionship to this romantic one, which, poetically, courts the shades of evening to exhibit its lovely flowers to admiration—is a plant, a singularly beautiful flower, the properties of which I would endeavour to vindicate from the many unfair aspersions. I would form a bed by a judicious mixture of the above with Gazania splendens. Refute the very idea of such a bed—say it will not suit a gay parterre. Questionable if it does not prove as gay as many favourites there already; but its real place is the one or two secluded beds in the little nook or labyrinth called "my lady's own," for which nothing can be more applicable. What two in the whole list of bedding plants so striking when the Gazania is closed for the night? Then will the lovely Primrose expand to watch beside its cavalier-like companion until it awakes to greet it in the morn!

It is to be regretted that the Œnothera cannot be more easily transplanted, as by the removal of old plants they generally become lost. A stock of the same can be kept up by means of propagation, &c.; and I think it possible, that if it were moved at some not at present well-known season, it could be accomplished with a greater chance of success, possibly just as it begins moving in the spring, like our old favourite border Lily, than which no time is better to remove the bulbs than immediately succeeding the first show of growth in the autumn. It is worth a trial in the spring—say April.

It is with no little pleasure I see a proof of the revival of interest in florists' flowers, more especially herbaceous plants; and I am very pleased to see The Journal of Horticulture take the lead in this respect. There are few of its readers, doubtless, who have not some happy idea of an old plant or two of this division impressed in memory, with which they would not part for all the bedding-out beds in Britain.

One of my own happiest marks in memory is the time spent in a superior herbaceous ground. I allude to the one planned and planted by Miller & Sweet, at Clifton, near Bristol, in possession of Garraway & Co. at present. Here each variety is kept studiously named, and there are very few weeks in the year without some little favourite taking its opportunity of greeting its seasonal visitors. Here, also, are some of the best-in-effect rustic stone archways, rockeries, &c. They lose nothing in value with comparison with modern ferneries. Indeed, I question with all the rage for ferneries any do really beat these.

To return to our old fancies. What flower grown is at once more singular, more beautiful, I might almost say more gorgeous than our own Lady's Slipper, Cypripedium calceolus? and yet what flower is really less known that has any pretension to a place in a nurseryman's catalogue? It is really a deserving plant, undeservedly kept in the background. Here, also, are seen the huge Thistle, the emblem of the energetic Scot, known to few (save as seen in our national coat of arms), on this side of the border, and the pretty little Phlox frondosa, the queen of its class when grown to perfection. Here you are also forcibly reminded of the straits our forefathers must have been in for names wherewith to christen the many floral beauties. In close companionship you find the Old Man's-beard, the Goat's-beard, and the Lamb's-beard. This latter, though singular in name, is-rather a showy plant. A good belt of it would look well in any make-up shrubbery-border or otherwise.

A few words in conclusion in vindication of Gazania splendens. Is the real habit of the plant properly known? The majority write to say how bad it turned out at a certain place last summer, or the summer before. Indeed, I visited gardens myself where it met me as the most pitiful object, and simply because it was really not properly understood. Of all plants I know there are none that suffer so much, and at the same time show it so little. I believe the Gazania would live and look well whilst the veriest mite of sap (a white fluid which it contains in great quantity when healthy), remained in it. Then it would wither and show its sufferings, and then, perhaps, it would receive a pot of water. It would revive and, from appearance, thrive well, whereas it was suffering more than any other bedding plant in the garden. The Gazania is, so to term it, a very gluttonous plant. It requires a thorough good border to grow and flower it properly; and unless it is growing in a healthy state, the flowers are not so large nor so many, and they open later in the day to close earlier. I have no faith in starving a plant of this sort with the object of a greater show of flower, for immediately you begin to starve it it falls back upon its sap required for active growth. The flowers then suffer; you retard and diminish the flowers you wish to forward, and receive greater powers of expansion. This is the whole secret of its doing in certain places so badly.—W. EARLEY, *Gardener, Digswell House, Welwyn.*

FERTILISING MANGLES' SILVER BEDDING GERANIUM.

CROSS-BREEDING AND HYBRIDISING.

IF Mr. Beaton notices Mr. Smith's, of York, interesting communication, would he have the kindness to state whether Mangles' silver bedding Geranium can be fertilised by its own pollen and produce seed? and whether its pollen will fertilise other kinds of Geraniums?

[Mr. Smith's is indeed the most interesting communication we have had this season on cross-breeding, after the account of the influence of the shorter stamens of some genera. It will, no doubt, open a field for some of the cross-breeders; but I have stated in almost all our recent volumes that Mangles' Variegated Geranium does not produce pollen. It has not been known to cross with any other kind till the instance just recorded.

The natural species from which Mangles' is a sport, however, is the most inveterate seeder in the family, but it would not breed with others in the usual way. This is a good opportunity of explaining the difference which practical writers should observe between hybridising and cross-breeding. A seedling between Tom Thumb and Flower of the Day would only be a cross-bred plant, not a hybrid; but if the green parent of Mangles' Variegated Geranium would cross with Tom Thumb or with any other bedding Geranium the seedlings would be hybrids, and most of them would probably bear the character of hybrids—that is, be intermediate between the two parents, the two being distinct kinds or species. Again, if any of the Ivy-leaf kinds of Geraniums would cross with any of the other bedders, the seedlings would also be hybrids; but seedlings of crossed Ivy-leafs among themselves would only be cross-bred plants.

We are not aware of any hybrid Geranium being now in cultivation. They are all cross-bred plants, the offspring of one original kind; and so are the Verbenas, Calceolarias, Tropæolums, and most others of our common plants—hardly a hybrid among them all; and a fourth part of their number is not even cross-bred, but variations from one parent, as is the case lately supposed to uphold the doctrine of superfœtation.

Practically the difference between hybridising and cross-breeding is very great indeed. Ten seedlings from a true hybrid origin would give the hybridiser ten chances of an intermediate offspring between two distinct kinds of plants—as, for instance, between a Pontic Rhododendron and an Azalea; while ten seedlings from kinds of plants which are merely cross-bred among themselves would hardly give one chance of a true cross between the parents. The parents of all our bedding Geraniums, Verbenas, Petunias, Tropæolums, and of most of our bedding Calceolarias, have lost their fixed characters as distinct kinds or true species. They are broken down, as cross-breeders term it, and not one of them comes now true from seeds by its own pollen. Then the mere act of applying the pollen of any one kind of them on another kind will not change their nature and give an intermediate offspring. Their own unfixedness of character is necessarily seen in all their seedlings—that is to say, cross-bred plants exhibit characters which were never seen in either of their parents; in fact, they sport just as much when they are crossed as when they are not, so that crossing them has only one-half, if even so much, of the merits of their respective qualities: hence the origin of the reality of the mistakes about superfœtation.—D. BEATON.]

THE FARMER AND GARDENER COMBINED.

I HAVE inferred, from the generally excellent remarks of "THE DOCTOR'S BOY" on the combination of the farmer and gardener in such places as he describes, that the manager will have a few assistants; and I beg to ask, Could the person whom his "rating" improved find no more judicious employment for his time than milking the cows and feeding the pigs? I think it will be admitted that the gardener referred to would be the better by understanding the advantages of the subdivision of labour, and being taught to produce a better result by looking after the more important parts of his joint charge. He surely would be able to instruct an assistant to attend to the swine, &c.

As a young gardener, I will venture to say on the part of my fellows in the nurseries, or at least the intelligent and worthy portion of them, that if no better position is offered them to "stand in" than this trough and milkstool business they are likely to remain in the nurseries, or try some other market.

But the combined management of the farm and garden can be conducted efficiently by the gardener without such attention from his own hands. Most of the places in Ireland (nearly all the smaller ones) are so managed, including those described by Mr. Fish and many more good ones, which I hope he will describe. I was not before aware that gardeners thought it degrading to accept such a situation; on the contrary, I believed it to be more respectable and in every way beneficial to them to have the management of the whole place in which they might be employed.—WILLIAM ROBINSON.

VARIEGATION IN THE LEAVES OF PLANTS.

I HAVE been considerably interested in several letters which have recently appeared in your columns relative to this subject. Some of your correspondents contending that variegation is synonymous with disease, and others inclined to think it entirely distinct from it.

In a former communication to you on this subject I admitted that variegation was invariably accompanied with a diminution of vigour, or at least carried with it a dwarfing influence; and most of your correspondents on the subject have, I think, admitted this statement to be correct. Still this admission does not in the least favour the idea that variegated or dwarf subjects must necessarily be diseased; on the contrary, I can perceive nothing to prevent a dwarf from being equally healthy and as tenacious of life as a giant, and I feel inclined to repudiate the term "disease" in relation to variegated plants, as it is suggestive either of recovery or dissolution; and variegated varieties of plants certainly do not appear to be a doomed race, as their existence can evidently be prolonged to an indefinite period with much the same ease and certainty as that of their green-leaved congeners. I write from memory, but, if I rightly recollect, some of your correspondents have asserted, that upon certain soils and by certain peculiarities of treatment, they can produce variegation at pleasure.

This may be the case, but I must confess that it is contrary to my experience on the subject.

It is easy enough to produce a blanched or sickly appearance, which under favourable influences will disappear, but this is evidently quite distinct from variegation.

But if it should be conceded that variegation is not disease, the question which will naturally present itself will be—If not disease, what, then, is it?

This question I unhesitatingly confess my inability to answer further than to say that I have always regarded it as an accidental peculiarity analogous to other phenomena occasionally occurring in the animal as well as in the vegetable kingdom, but the cause of which we have not as yet the means of ascertaining, but which peculiarities may and frequently are transmitted to succeeding generations in accordance with the recognised law of hereditary transmission of qualities.

Many years ago a summer's day found me angling in one of the tributaries of the "silvery Tweed." Some boys from an opposite bank of the stream threw a litter of kittens into the water, and, not very humanely, amused themselves by pelting them with stones. Soon after this the current bare the bodies of the little creatures near to where I stood, when I observed that one of them was minus the tail. I felt curious to ascertain if this appendage had been removed, or if it had never existed, and, on examination, I found the latter to be the case.

I then called at the cottage where the kittens had been brought from, and requested of the owner the favour of a personal interview with her cat. The old lady seemed somewhat surprised, but readily assented, assuring me at the same time that she (the cat) was a "rale gude mouser"—an assertion which I was not inclined to dispute. But a single glance at the interesting mother of the recent victims to the doctrine of Malthus convinced me that, in addition to her mousing qualities, she also rejoiced in the possession of a spinal continuation of the ordinary dimensions. And on careful inquiry I could not find that any tailless Grimalkin of the opposite sex was known to exist in the neighbourhood; so this poor tailless kitten I considered as an accidental peculiarity, or sport, from which I did not doubt a race of tailless mouse-catchers might have been perpetuated.

A very few years since such a thing as a double-flowered Petunia was not thought of, but at last a double white variety accidentally, I suppose, made its appearance; but this variety, or sport, being what is termed a monstrosity, and destitute of an ovary, consequently could not produce seed, but it produced perfect pollen-bearing stamens, which cultivators were not slow to take advantage of, and the result is that double-flowered Petunias of various sizes and colours are now as common as the single-flowered varieties.

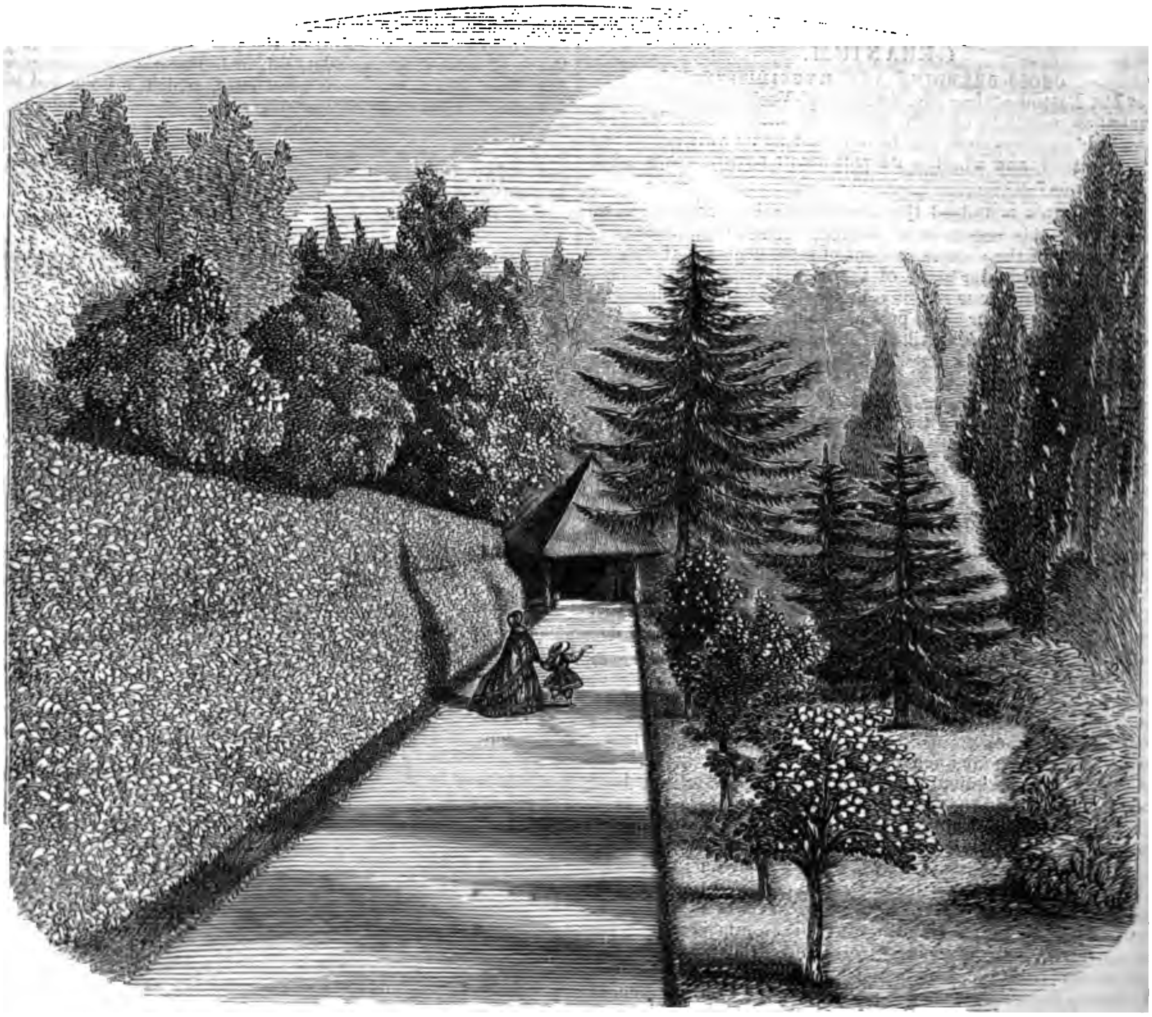
So it appears evident that when a sport is once obtained there is no mystery and but little difficulty in diversifying and improving upon it *ad infinitum*.

But if any of your correspondents can throw any light upon the cause or causes originating or producing these sports or peculiarities, their doing so will, I have no doubt, afford much gratification to a large portion of your readers.—G.

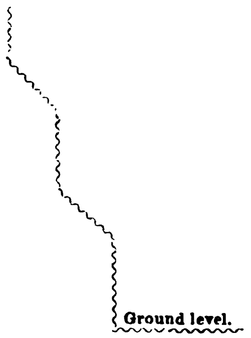
LINTON PARK,

THE SEAT OF LADY JULIA CORNWALLIS.

(*Continued from page* 220.)



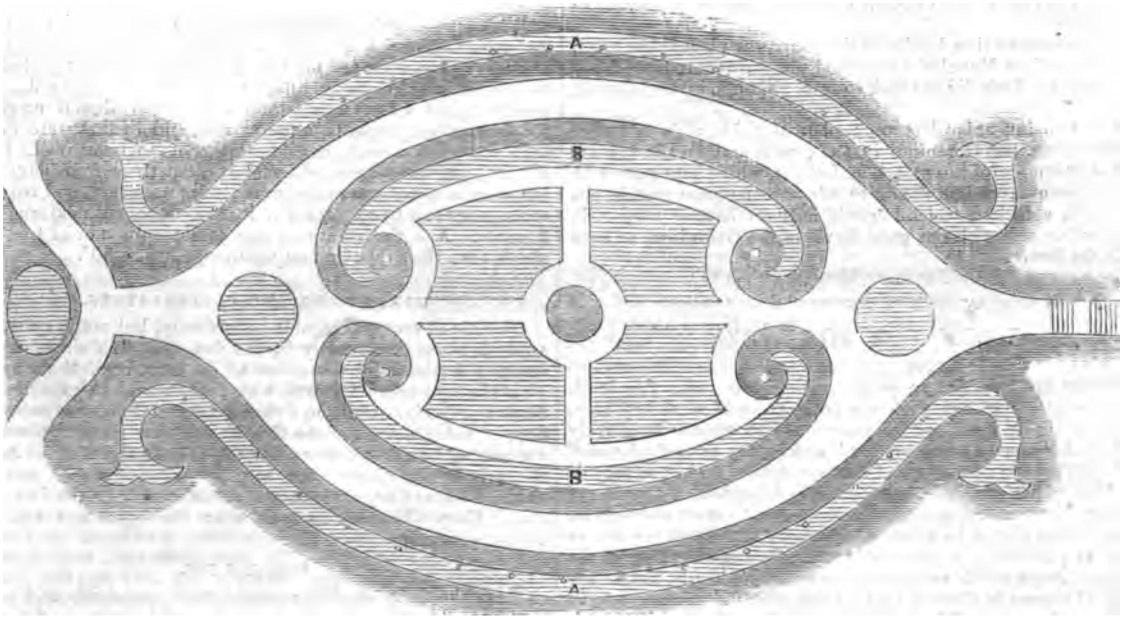
[illegible] ever saw. Facing the [illegible] manner. To the walk and allowing about 2 feet front for a grass verge, the [illegible] considerable distance [illegible] rises perpendicularly about 3½ feet, then slopes [illegible] of about 45°, and again rises about 4 feet, after which it is sloped back a second time for some 6 feet or more at about the same angle as before. Some Fir trees form the background to this bank, which acts as an admirable shelter to the walk and Pinuses; and the Laurel-bank is in itself as good a piece of workmanship as can well be found. Our engraving only imperfectly shows it; but the accompanying diagram will help the reader to understand it. The Laurels seem to endure the cutting very well, and the mechanical execution of the work was faultless. Mr. Robson told us that it was closely cut in about the second week in July with common hedge-shears; and as a little growth took place after that time, it was looked over in the autumn, and such shoots as were too long to remain the winter were thinned out with the knife, leaving the whole covered with such shoots as did not exceed 3 inches in length or so. This second growth looking so much better than a raw-cut face, the symmetry of the bank being still maintained in all its integrity, and it would be impossible to improve it in any way.



The summer-house is a commodious place, the top being thatched with reeds, and the sides and floor coated with rustic wooden work, backed by a mass of shrubbery. This forms the most eastern portion of the grounds, and the view to the east and south-east from here is magnificent, while the robust health of the Pinuses equals that of any similar collection we have ever seen. Pinus insignis assuming the attitude of a large timber tree, being densely clothed to the bottom, which is 38 feet in circumference. Some Cedrus deodaras are nearly as large; and P. ponderosa, a magnificent specimen, was almost as large, though thin of foliage, as is its habit compared with the others. The collection also contains excellent specimens of P. pinsapo and cephalonica, Cryptomeria japonica, some Wellingtonias, Araucarias, and other kinds, including a promising Picea nobilis, which, after losing its leader some years ago, has formed another, and seems disposed to make up for lost time.

We understand that very little loss was sustained here last winter, the natural dryness of the ground no doubt tending to lessen the evils of an unusually severe winter. Even the Laurustinuses were not prevented flowering, but some Tea and other Roses, as well as several plants not often trusted out of doors were also sufferers.

At a short distance from the commencement of the Laurel-bank alluded to, a noble Cork tree forms an important object, standing as it does in the centre of the broad walk. This tree, which has a symmetrical head, is upwards of 50 feet high, and the top spreads into a diameter of 56 feet, while the circumference of the bole about 6 feet from the ground is upwards of 8 feet. This tree is in admirable health, and promises to attain the proportions of indigenous trees. We were told it was something over eighty years old, and must have grown freely during the time, and to all appearance it is in as robust health as that of any other description of tree. We have been told it is the second finest tree of its kind in England, and so far as our observation goes it is the first. The bark wrinkles beautifully, and is of a pale buff or grey. The bark is also of considerable thickness, though, of course, removing it for use is quite out of the question in a position like this.



A A Ribbon-borders, three rows of bedding plants in each, with Pillar Roses festooned at top.
B B Ribbon-borders, having three rows of bedding plants.

As it is said no garden is complete without a rosarium, we append a ground plan of the one at Linton, which differs considerably from the general character of such features; for however beautiful Roses may be at certain times, there are periods when they certainly are not inviting, and many of the most esteemed varieties are the worst-looking at times when not in flower. On this account many growers have their Rose-beds at a distance from the mansion; but in the case before us means have been taken to render the rosarium attractive at all times. The pleasing forms of the beds and walks which, lying on a rather steep incline, are seen at a great distance, the white walks contrasting so well with the framework of turf by which they are intersected, and the gay ribbon-borders. Besides which the pillar Roses which surround the whole have an interesting appearance. They are planted where the dots indicate, are about 8 feet high, and their tops festooned together, with an arch over the walk at each end, forming a complete circuit of the whole, the junction of the festoon-work and the arches being by a short horizontal bar between the two pillars that are about a yard apart; but as they have not been planted two years yet, the whole of the arches and chain-work are not yet covered, but they promise to be so early next season, and many of them are covered now. The two round beds at the ends are respectively of crimson and blush China Roses, and the central smaller bed was intended to be turf, but has been planted with its substitute, Spergula pilifera. It is right to say, that all the beds and turf edgings, including this one, are edged with brick, as has been before described. The four large beds in the centre are dwarf Hybrid Perpetual Roses on their own roots, and being of good kinds, and the situation in every respect favourable for Roses doing well on their own roots, they bloomed well, and presented none of that irregularity of growth and vexatious suckers we so often see in worked plants; and though in other parts of the grounds we saw standard Roses occupying positions which could only be done by such like, they are only tolerated at Linton where plants on their own bottoms cannot be had. In this garden, however, all were on their own roots, and excepting the climbers against the pillars all were dwarf. The four beds alluded to in addition to the edging of brick, had that much-neglected plant Aubrietia purpurea, planted by the side of which entirely concealed it by its low-growing, compact habit. The two round beds were in like manner edged with Thrift, which sends up more rose-coloured blossoms during the summer than most people are aware of, who have not seen it in perfection. Four Irish Yews occupy the centre of the knobs of the turf frame at the inner borders, as well as the outer ones, all of which are something over a yard wide; and planted with bedding plants in summer, and in winter with Crocus and early spring-flowering plants, and by their shapes add materially to the general effect, and being planted with three rows of plants each, nothing could well look better than they did in August when we saw them. The planting was this—

The first outside border had the centre row of Verbena Purple King; the inner row next the walk Calceolaria aurea floribunda; and the outer row a white-edged Geranium called Shottisham Pet, which is here the greatest favourite Geranium in its way. The leaves being somewhat cuppy with a broad tip of pure white thrown upwards, look more rich than any flatter-leaved variety could do when looked at in a horizontal position. It is also a free grower. The appearance of this border was rich in the extreme, exceeding that of any other in the garden.

The corresponding border to the above was planted the same, only Geranium Mangles' Variegated was substituted for Shottisham Pet. This did not look so well, although it was tolerably good.

The two inner borders were planted alike, with a scarlet horseshoe-marked Geranium in the centre, and on the concave side a strong-growing, pale blue Lobelia, which kept pace with the Geranium; and on the outer side next the grass margin was Cineraria maritima, which towards autumn became very rich, contrasting well with the great leaves of the Geranium, or even with the flower.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Little can be added to previous directions under this head. The operations of one week are an epitome of what has been, and still will be, necessary for some weeks to come. It is truly said that "necessity has no law," and it may as truly be said, that most of our operations at this season have no law as regards the time of performance; being entirely dependant on the state of the weather, common prudence will suggest to every one that no opportunity should be allowed to pass by of getting the soil as soon as possible in a favourable state for the reception of the various crops which must soon be committed to it, and as the basis of success is allowed by all good practical gardeners to be a thorough system of drainage, no time should be lost in attending to this most material point. As this kind of work can be done at any time when it is dry overhead, it is advisable to look to it without further delay. *Asparagus*, when making successional-beds, use a quantity of leaves with the dung, which will keep up a more moderate degree of heat, and retain it for a greater length of time than all dung. *Cabbage*, earth up, if not done, the weather now being favourable for that purpose. *Carrots*, if young ones are wanted very early, seed should now be sown in a slight hotbed. *Endive*, take advantage of a dry day to lay tiles over some of it in the open ground. Take up a portion of the best and lay in a frame, or shed, as a reserve in case of a severe frost. *Peas* and *Beans*, if frosts should be likely to set in severely, cover with partially decayed leaves those that are up. In favourable situations where neither forcing-houses nor pits are at command, another sowing may be made, [illegible] be spared till March, it is far preferable to sow in pots. *Radishes*, every fine mild day draw off the lights entirely, this will give them strength to form tap-roots.

FLOWER GARDEN.

Examine Dahlia roots to see that they are not rotting, for the want of this attention many persons are disappointed at finding them in the spring only fit for the rubbish-heap. A thorough cleaning should once more take place in all pleasure-grounds, as by this time all the decayed leaves are down. Fuchsias in beds or borders may be cut down and mulched over. If it is desirable to preserve any large specimens with their tops on, a row of stakes may be driven round in a circle and surrounded by a mat, the interior being stuffed loosely with clean new straw. The top to be thatched to exclude wet. Before enclosing it will be well to pluck off all the leaves, as they encourage mouldiness. Rustic baskets and vases planted in the summer to have the soil taken out of them in order to keep them from being injured by frost, and to prepare them for receiving fresh soil next spring. Where shrubberies are too thick, take up some of the best specimens and transplant them, and cut down inferior sorts.

FRUIT GARDEN.

Get all kinds of fruit bushes pruned, the prunings cleaned off, and the ground manured and forked over. Open out the centre of orchard trees for the admission of light and air, cutting out all dead wood and the branches that cross each other. The renewing of fruit-tree borders where the soil is impoverished is a very necessary operation at this season. Let as much of the old soil be removed as can be done without disturbing the roots, and its place be supplied with maiden loam. Avoid using stimulants, which often induce over-luxuriant growth without a corresponding degree of fruitfulness.

STOVE.

Where practicable, plant-houses ought to be covered with some waterproof material, or mats, in severe weather, especially the stove. Where mats are used they should be sewn together for the convenience of being rolled off and on as required. All plants, except a few Orchids and some bulbs, should now and for the next six weeks be quite at rest, and in that state 55° is high enough for them in cold weather. No more water to be given at the roots than will merely keep them from flagging; but some atmospheric moisture is always necessary, and requires some judgment to apportion it in accordance with external influences. A high dry atmosphere is more prejudicial to stove plants than the cold of a temperature as low as 50°.

GREENHOUSE AND CONSERVATORY.

Give air at every favourable opportunity, but not in currents; apply fire heat occasionally in the day with free air to dry up damp. Azaleas and Camellias to be kept cool, the forward plants being pushed forward with a little heat to expand their flowers properly. Shift on Calceolarias and Cinerarias as before. Supply water to such of the Heaths and New Holland plants as are coming into flower more liberally than to the others. Assist the early Pelargoniums; but keep the summer plants cool and airy. Remove Chrysanthemums out of flower to the foot of a wall. Keep Chinese Primroses near the light and air, and water cautiously.

FORCING-PIT.

Keep the heat at 65° at night with moisture, and never neglect to fill up every corner of this useful structure, for on it the greater portion of floral display for some months depends. Get in all kinds of Dutch bulbs, American and other flowering shrubs, Lilies of the Valley, Heliotropes, Pinks, Roses; and, in fact, all kinds of plants which are usually forced for decorating the conservatory and drawing-room. Keep down the green fly by occasional fumigations of tobacco.

PITS AND FRAMES.

Give Auriculas, Polyanthuses, Carnations, &c., air daily, either by tilting the lights or drawing them off. Keep the plants, particularly those with soft succulent leaves, free from weeds and litter. Keep the plants as dry as possible; and, if the atmosphere is damp, it is not a bad plan to dry it by placing a pan or two of burning charcoal in the pits, at the same time giving plenty of air; this should be done on a dry day.

W. Keane.

DOINGS OF THE LAST WEEK.

ROUTINE.

The weather has been too wet for thoroughly cleaning the pleasure grounds, and hard-switching the walks before hard rolling; but we hope to do so directly as the glass is rising nicely again. Meanwhile every bit of decayed flower-beds has been made to do duty, in fermenting, to give out its heat to some useful purpose. Hollyhock-stems, when cut into small pieces, do admirably for this purpose, and especially in keeping somewhat open other vegetable matter that would run too closely together, to secure a mild, continuous heat. Cleared away the leaves from Sea-kale, and placed a little ashes over the crowns alike to protect them and to keep the frost out, so that they can be taken up for forcing at any time. Did the same with Rhubarb, and placed some rotten dung over Asparagus. Will use the first fermenting material we can get for a two-light box for sowing Early Dutch and Early Horn Carrots in, and a sprinkling of Radishes on the surface. The young Carrots in the open ground are useful for soups, &c. Covered pieces of Endive in earth-pits with stubble and leaves, to blanch it thoroughly. It blanches nicely if taken up and put into a cellar or other dark place, but the stubble and a few leaves save all trouble in moving. Banked up the Celery also with stubble. In stiff soils this is better than using too much earth, and the blanching is equally well done, and wet thrust past, and frost kept out. Only the points of the leaves are fully exposed, and a small heap of stubble or other litter is left at the side ready to be thrown on in very severe frost. A few spruce branches are also useful for such a purpose.

COLD PITS, &C.

Occasion has been taken of the mild weather to give these all the air possible to prevent anything like damping taking place. *Calceolaria cuttings* planted out in the pit at the end of October are just rooting nicely, and not one seems to have gone out of thousands. We must keep these as backward as we can to save room; and, therefore, all the air possible, and every means to prevent elongation must be resorted to. We shall be able to give not more than about 1½ inch to each plant until the month of March, when we shall plant them out in protected beds; and if too close and crowded now, and we were obliged to cover them up as we did for six weeks last year, we should expect them to lose many of their lower leaves, and what is much worse, force us to have the bother and worry of picking them off. We hardly ever think of saving an old plant of these shrubby Calceolarias, for a little cutting inserted in October will be pretty well a better plant than the old one in May, and then we could keep from a score to a hundred in the space that would be required for one old plant. As stated some time ago, the having the plants too forward, and cramped in their roots before planting out, is one reason why so many people are forced to give up yellow Calceolarias for their beds. We hardly lost a plant last season, and the beds continued blooming freely until the cold frosty nights. They would not have done so in our dry climate last season without frequent watering and mulching. The season before 1860, was just the season here for them, but it was too wet for

SCARLET GERANIUMS.

We have, also, in addition, to similar care with *Scarlet Geraniums*, been forced to go over those especially that were struck in small pots—say from eight to ten plants round a small 60-pot, and pick off a few damping leaves and give them more room, as from growing a little they got into a perfect thicket. All these modes we have to resort to in the winter months to save room. After March or so we can resort to temporary protection and thus gain room. No doubt, time would be saved if we gave each of these small plants or cuttings a small pot to itself; but then we should scarcely find room for a tithe of what we wanted. On the same principle we have no fault to find with those who can pot off their *Verbenas* and *Petunias* separately in the autumn. Want of room compels us to strike from a dozen or more in a small 60-pot, and when about this time they want much of care in watering, &c. We generally pot them in a piece just as they are into a 48, or even a 32-pot, and there they get strong and robust, and afford plenty of cuttings in spring; and these generally bloom better and thrive better than older plants, only we must keep some older for a stock. Verbenas also do well treated as we have mentioned for Calceolarias, placed out in a bed in the middle of September, in rows 2 inches apart, and 1 inch from plant to plant in the rows. We have just given larger pots to those in 60's that were difficult to keep moist enough, and they will be easier kept though they take up more room than they did before.

Potted off singly into small pots Alba Floribunda Geranium, and other hardy fancies, as Rouge et Noir, Lady Mary Fox, Sidonia, &c., as room could be got for them. We find all this section do best in beds when they have less or more of a ball; and when thus established in these little pots they can be turned out into boxes, or temporary beds under protection by the end of March, and may be moved to the flower-beds towards the end of May with a nice ball, and the fresh roots hanging all round it like a wig, ready to enter among the fresh soil; and thus treated they require far less attention than when kept all along in pots—in fact, in the matter of watering alone, a little drop of warmed water is placed on the soil round the roots when turned into the temporary beds, and they seldom need more before being finally planted. If we have room we do some Scarlets the same way; but in general they do pretty nearly as well without balls as with them, though they do not look so well for the first week. Except where some Grapes are still hanging, we have no glass but what is full to overflowing at present.

Moved Pelargoniums where getting too thick, and stirring up the soil, and picking off any big leaf that showed the least signs of decay, leaving the forwardest unstopped, and stopping any shoot extra strong in the succession, leaving the training and tying to some wet day; as, also, the cleaning and packing of seeds, &c. Prepared soil for potting Ferns, stove plants, &c., as there is more leisure for such things now than in the spring of the year. Prepared a slight hotbed by means of tree leaves in a pit heated by hot water for placing the tenderest in immediately after shifting, so as to give the roots a fresh start.

Took all favourable opportunities for pruning, nailing, &c., choosing the best weather, as a man will do double in a warm sunny day, especially at nailing, that he can do in a cold damp day. Nailing in snow, and sleet, and heavy rains, we trust is numbered with the doings of the past years never to return again. They who keep men out even in wet days neutralise even their own selfishness; for besides the injury to health thus imparted, men so used cannot be expected to put their shoulders earnestly to the wheel when thorough exertion is required.—R. F.

Erratum—Page 222, 1st column, about middle, "large outside boxes," &c.—"boxes" should be "leaves."

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Pear Tree Insect (*Z. A.*).—The ravager of the Pear tree leaves in Somersetshire, leech-like in colour and shape, was the slimy grub, or larva of the Pear Saw-fly, Selandria æthiops. It is destroyed by dusting over the leaves with powdered quicklime.

Tan as a Manure (*C. G.*).—If well decayed it is a good general manure; but we should not depend upon that alone. As you cannot obtain stable manure, we should use the house sewage mixed with it, and water the crops with a weak liquid manure of guano.

Geometrical Gardens (*A Subscriber*).—There is no book especially on this subject for small gardens. Have you our "Flower-Gardening for the Many?" It contains several such designs.

Vines in Pots (*Greyfriars*).—In these times of war-threatenings the American papers come rather irregularly, but we will look out for what you need. If there is any particular point you need information upon write to us, we can obtain as good advice from gardeners on this side the Atlantic.

Scale Insect (*A Subscriber, Lichfield*).—We do not think the bark injured by the linseed oil at present, but it is liable to decrease the tree's vigour by stopping up the air-pores. You had much better use a creamy mixture of soft soap, flowers of sulphur, and water. The trees that have been treated with the linseed oil we should scrub with a strong solution of common soda, such as washerwomen use.

What a Boiler can Heat (*A Subscriber*).—We cannot answer you satisfactorily without knowing the size of your boiler. It may have enough to do as it is, or may be capable of heating double what you propose. At any rate before we could say, we should require to know the size of the boiler, the quantity of piping it now heats, and the distance and position of the new pit from the boiler. In the meantime to commence in February. We do not suppose that a pipe all round, or a flow and return beneath the bed, with earthenware pipes to let up the heat will be sufficient for a twelve-feet-wide pit. We think you will require the two pipes for bottom heat, and two for top heat. British plate glass will do for such a pit, but if you want to avoid all trouble in shading and yet get sufficient light, you will find Hartley's best rough plate best.

Fruit in an East Orchard-house—Pruning and Potting Roses (*A Subscriber*).—We have seen such trees ripen their fruit on east walls, and they will do so better under glass in an orchard-house having that aspect. Of Pears for such a house, buy Marie Louise, Duchesse d'Angoulême, Glon Morceau, Winter Nelis, Van Mons, and Louise Bonne of Jersey. Plums and Peaches may still be potted, but not with such a good chance of setting their fruit as if done in September. If the pots are at all large, we would not repot, but rather top-dress and let the roots run a little through the pots. When Orange trees are repotted it is a good practice to give a little extra heat afterwards. The time will do well enough if the roots are not left stagnant afterwards. The Roses may be pruned in now, not cut down. The potting may now be done, but we would have preferred doing it in September. You would see in answer to another correspondent, that pruning and potting in the case of pot plants, should not take place simultaneously.

Ghyselin's Flower-pot (*Palmam qui meruit ferat*).—It is only a revival, not a new invention. Our plate at page 195, represents what was published in *La Belgique Horticole*, in the year 1850.

Cocoa-nut Fibre (*L. M. R.*).—On the first page of our last Number there is an advertisement of where it is to be obtained.

Young Wood of Vines (*A Constant Reader*).—You tell us that the wood of the Black Hamburgh is not so well ripened as that of the Muscat, but after examining the specimens we think that they are both perfectly ripened, and are of opinion that you need have no fear about next year's crop. The want of colour in the Black Hamburgh Grapes, probably arose from deficient air. Ventilate more freely in the summer and autumn.

Cocoa-nut Fibre for Rhododendrons (*A Novice*).—Rhododendrons grow in some kinds of loam as well as in peat. On such loams the cocoa refuse would be a good, useful dressing, but on loams in which the Rhododendrons would not grow naturally, the cocoa-nut refuse is of very little use indeed.

Scale or Coccus Blight (*A Subscriber*),—We do not remember any offer of a prize for a description of the species. In the *Cottage Gardener's Dictionary* there are notices of all the common species under the head Coccus. We should paint over the infested trees now, and again in the spring, with a thick mixture of soft soap, flowers of sulphur, and water.

Bark-bound Trees (*Idem*).—It is a barbarous and unscientific proceeding slitting the bark. What is called bark-bound is only a deficiency of vigour. Scrub the bark with a hard brush dipped in a brine of common salt, thin out the smaller branches, but do not cut away any large branches; and apply some manure to the roots.

Canker (*Idem*).—It is a disease, an ulcer. The canker worm of the Bible has nothing whatever to do with such a disease.

Cocoa-nut Fibre for Plunging (*Rev. C. D.*).—The Cocoa-nut refuse is not at all suitable for keeping bottom heat for Cucumbers. In the first place, it does not heat of itself, and in the next place when it is exposed to a hot-air chamber or draught, the surface of it dries to such a degree as to become a powerful nonconductor of heat. But where strong heat is not required, and where it is not liable to get dry, we believe it to be the best material for plunging pot plants in for a steady, mild bottom heat; that is Mr. Beaton's account of it, and we have it from Mr. Standish, of Bagshot, that as no worms or creeping things harbour in it, that it is the best thing to plunge pot plants in during the summer, it keeps the pots constantly damp, not the mould in the pots, and no enemy comes near them. He uses it in quantity for plunging in.

Culture of Ixias (*H. S.*).—The best way to grow Ixias of all sorts, is to have them potted at the very end of September, in rough peat and sand, in a medium state of moisture—a state neither wet nor dry, and that state to be kept so till the leaves are 2 inches long above the pots, and the pots not to have a drop of water by hand all that time, if it lasted three months. The best way to keep the pots and their contents in that medium state, is to plunge them to the rim in sand or sifted ashes, or some loose refuse, but each and all of them, the plunging materials, to be also in a medium degree between wet and dry. Then with the moisture of the atmosphere during October, November, and December, the pots, or rather the bulbs, would and should not need any water whatever. The best place for Ixias of all sorts, is a shallow cold pit, a turf-pit best of all; and all the Ixias want is just to be kept from frost and no more, and to have the lights off every fine and dry day during the whole winter. When the Ixias show for flower, they do it like Wheat in the field, then it is time to raise the pots, to wash them, and to stage them in a dry greenhouse, where they will bloom from the middle of April to the end of May, then go to rest till next potting time, and they should be kept in the same balls till then.

Fuchsia Seedling (*C. T. H., Dorset*).—The white Fuchsia microphylla must be a very pretty thing; but as the old microphylla was clouded by the [illegible] of the new race, so will the white of it be by the larger whites.

Seedlings of Pinus insignis, excelsa, and morinda (*Idem*).—The Pinus seedlings of last spring, now in pots, had better remain there just as they are to the middle of next April, then to be planted out in nursery-like rows in light soil.

Names of Fruits (*R. M., Ireland*).—*Apples.*—No. 1, Parry's Pearmain; [illegible], not known; 3, Golden Russett; 4, unknown, worthless; 5, White Costin; [illegible] unknown, worthless. *Grapes.*—1, being so small a portion we can hardly recognise it, but it appears to be Raisin de Calabre; 2, Chasselas Musqué.

Names of Plants (*G. A. Clark*).—1, a form of Lastræa filix-mas; 2 and ditto of Polystichum angulare; 3, ditto of Lastræa dilatata. They all look like peculiar and rather marked varieties, but are in too imperfect a state for further determination. No. 1, is especially promising in its appearance. [illegible].—Cyperus [illegible] ternifolius. The [illegible] are indeterminable. Plant [illegible] alike. (*J. J., Durham*).—The leaf is, doubtless, that of some Scitamineous plant, but in the absence of flowers and without any information as to the plant's habit, we are unable to recognise it. (*J. D., Forfarshire*).—1, Geranium molle; 2, Geranium columbinum; 3, Galium aparine; 4, Lamium incisum, apparently, but such specimens cannot be named with certainty. Those who seek information ought to take the trouble to send well-selected flattened specimens, not confused rolls of herbage without flowers as these and many others which reach us are.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CRYSTAL PALACE POULTRY SHOW.

DECEMBER 11TH—14TH.

It is a curious study to observe how the necessity of gaining a livelihood sharpens men's wits, and how they accommodate themselves to the circumstances that are likely to forward their designs. The most superficial observer cannot fail to be smitten with this. Take, for instance, the neighbourhood of the South-western terminus at Waterloo. In the early days when it was first opened good beds, luncheons, dinners were the inducements offered to weary travellers. When Southampton became the station for the Peninsular and Oriental boats, and Indians hurried up to London, those who keep houses of entertainment sought for something attractive to them. Now, the first thing that strikes them on leaving the station is that "Tiffins" are to be had. This practice is not confined to shopkeepers, but pervades every class. If a review is advertised in Hyde Park, chairs, tables, and forms are brought from courts, alleys, Seven Dials, and St. Giles. Drinks of every kind are for sale on the ground and on the road. When the Serpentine is frozen over, ginger brandy and peppermint-balls and hot elder wine are the most saleable commodities. In the neighbourhood of the banking-houses in Lombard Street men offer for sale mahogany cases for pens, ink, paper, and envelopes. For a few shillings a man meets with a case akin in appearance to the highly-polished and substantial one he has just admired in Glynn's, Curtis', or Overend & Gurney's. With a correct judgment of character and a keen eye to business men select for their customers the more staid of the clerks who emerge from counting-houses of all kinds, and imagining them to be family men, they tempt them with glittering trays of shining bells, copper-scuttles, fire-irons, fire-places, and other articles of furniture for dolls' houses.

The Crystal Palace Company on a larger scale cater for Christmas people, and provide a treat in the shape of a poultry show. It was an experiment formerly, and is now a success, and a well-deserved one. It differs from many, inasmuch as there is here no Committee of Management—all devolves on Mr. Houghton, who is eminently successful in the undertaking. There are many advantages that belong to the Crystal Palace. It has no difficulty in finding a proper place for the exhibition. It has an unlimited staff of men from whom to choose for workers. Carpenters are at hand to make any alterations that violence, pugnacity, or other feelings may make necessary. To order *extensive* alterations, and to see them carried out, makes the man who gives the order look round to see if he has not become the possessor of Aladdin's lamp.

With these helps, it is no marvel if all the Shows are successes, and this is no exception.

The *Spanish* prizes in class 1 speak in the names of the successful, Messrs. Rake, Bull, Fowler, and Wright; it was a good contest, and the birds were of very high quality. The adults were in better condition than the chickens. Many of the combs of the young cocks were disposed to turn over at the back. Now, as these were free from thumb-mark or hollow, they should not droop or fail; and those who see this in their birds will know whether it proceeds from forcing or undue feeding. It is certain that several of the combs were too large and coarse. The comb on the head of a young Spanish cock should be as firm and upright as a military cockade. When we state that twelve pens were named by the Judges, it will be seen we are not condemning the class—we are only pointing out that which we believe to be an evil. The four prize pens were very good. The class for "two hens or pullets" does not bring as many entries as we expected—fourteen pens. Mr. Martin's were good ones, and so were Mr. Roods'; but, as a whole, these were not in high condition. There was much competition in the "single cock class," which was strong. thirty-two entries represented most of our best yards with the exception of Mr. Lane's bird, none [illegible] Spanish classes speak highly as ever of the quality of the birds; but they ot in condition.

Show is in the heart of the *Dorking* country; and it is, re, no marvel if these classes form an exhibition by them-

Almost every yard of note is represented; seventy-two ere deemed worthy of especial note by the Judges. Lady Thynne took five prizes, Mrs. Beardmore three, Captain y two, Sir Joseph Paxton one. We have no hesitation in we have never seen a better show of this breed, and it nost difficult to see the difference between the prize and nded pens; the competition was so close that the sem- of a defect, or almost the absence of a quality, caused

We have so lately commented on the appearance of of these birds at Birmingham that we need only say that who do not figure as prizetakers are only excluded because vere no more to give, and not because their birds did not the distinction; this will readily be believed of such s those shown by Messrs. Wakefield, Vernon, and others. se classes the condition of the birds was admirable, and e of many of the cocks was almost marvellous. The *Dorkings* were very good.

, as at Birmingham, the adult *Cochin-Chinas* were very r, maintaining the marked improvement they have shown nter. With enormous size they have kept to beauty of nd perfect colour and condition. Messrs. Tomlinson, ove, and Stretch in these classes are what Kemble, Forbes, llett used to be in the Chancery Court—always before the

The *Grouse* and *Partridge* are daily becoming better re numerous. Miss Musgrove and Mr. Tudman showed l birds, and Mr. Bolton bids fair to rival them. He was taker in both classes. The *Whites* do not keep pace e other colours. Mr. Chase has the best, and here took e first prizes.

are very glad to note the constant progress of the *Pootras*. Messrs. Botham, Teebay, and Craigie have eir supporters through good and bad repute. They, e, deserve the honours they gain, when, the breed ully known, success is more difficult. Lady Louisa showed good birds in this class.

Game were excellent. Those classes that are usually he *White* and *Piles*, were good, especially Mr. Camm's r. Monsey's. It is hard to resist the temptation of many of the Game that were successful and if all that l it appeared our report would be merely a repetition rize list. We must, then, be content with naming those uck us most. Mr. W. Cox's first and second prize pens *k Reds* among the Chickens; Mr. Matthew's and Mr. among the old birds; Mr. E. Archer's *Brown-breasted* ickens; and Mr. Parker's adults; Messrs. Langdale and 's *Duckwings;* with Mr. Vernon's and Messrs. Ballard wson's *Blacks*, all merit especial mention. In these s usual, we have to remark the perfect condition of the d their exquisite feather.

Pencilled Hamburghs the adults look shabby in plumage d to the chickens. The *Golden* chickens merited again ich we said of them last week. They were beautiful. Nuttall, Munn, and Capt. Edgell may be proud of their Mr. Martin would have had it all his own way in *Silver-*, but for Messrs. Wood and Bennett. *Golden-spangled* y good, Mr. Lane had first and second, hard run by on. Mr. Hyde showed the best chickens. In this breed birds show best. The *Silver-spangled* deserve mention merits as classes. There were twenty-two pens of , many of them very beautiful. Lady Julia Cornwallis capital birds, but was beaten by Mr. Hope in chickens, Dixon in adults.

olands were as good as we ever saw; there was only one each, and the entries were small. Mr. Pettatt showed *olden Chickens*. As much may be said of their respective f Messrs. Adkins, Edwards, and Dixon, who took the zes.

alays were very good, but not as numerous as usual.

m classes are everywhere improving. *Sebrights*, *Game*, nd *White*, each is better this year than the last. In *encilled* and *White*, Mr. H. D. Bayley always takes s; in both he is closely followed by Mr. Cruwys. Mr od alone in *Silvers*. The *Blacks* were excellent. All numbers to the *Game*, and their quality was perfect. Postans, Swift, and Allen may be proud, for they beat ibitors. There were some unusually good feathered-legged Bantams shown in the "Various class." Mr. Forrest showed a remarkable *Duckwing* in the Bantam Cock class.

Mr. Manfield did as he often does, he took both prizes for *White Geese*. His pens weighed 63½ lbs. and 52½ lbs. There were only two pens shown for *Grey* and *Mottles*. Mr. Fowler was and would have been first; his birds weighed 69½ lbs. He took his old position in *Aylesburys*, his birds being 22½ lbs. and 20½ lbs.

It was a hard run in *Rouen Ducks*; the difference between Messrs. Fowler and Breavington being only half a pound—20 lbs. and 19½ lbs.; Mr. Punchard was only 1 lb. lighter. The *Black Ducks* were perfect. Mr. H. D. Bayly's *Call Ducks* were as good as can be; the same gentleman showed beautiful *Sebastopol Geese*. Mr. Baker sent some *Barnacles* in good feather.

We must be content to give the weights of the *Turkeys*, seeing the length of our report. The old prize birds weighed 63 lbs. and 59 lbs; the young birds, 56½ lbs., 56 lbs., and 54 lbs.

The *Game Cock Sweepstakes* filled to the number of thirty-four, and it was a difficulty to decide which were the best; there was hardly a bird that did not deserve a prize. Such as these deserve separate mention. We therefore say, the awards went thus:—Messrs. Dyas, Robson, Hindson, Keable, Sandford, Archer, Hindson.

Mr. Houghton was indefatigable, courteous, and painstaking as usual.

The following is the list of awards:—

SPANISH.—First, Miss M. L. Rake, Brandon Hill, Bristol. Second, W. R. Bull, Newport Pagnell, Bucks. Third, J. K. Fowler, Prebendal Farm, Aylesbury. Fourth, R. Wright, Holloway. Highly Commended, J. Martin, Mildenham Mill, Claines, Worcester; Miss M. L. Rake; R. Teebay, Fulwood, near Preston, Lancashire. *Chickens.*—First, J. R. Rodbard, Aldwick Court, Wrington, near Bristol. Second, Miss M. L. Rake. Third, H. Lane, Bristol. Fourth, R. Teebay. Highly Commended, C. Bedwell, Iford, Sussex; W. R. Bull, Newport Pagnell, Bucks; H. Lane; J. Martin; J. R. Rodbard. Commended, J. Smith, Middlesex; J. W. Smith, Oundle, Northamptonshire. *Hens.*—First, J. Martin. Second, J. Rood, 2, Princess Street, Camberwell Gate. Highly Commended, R. Wright. *Cocks.*—First, H. Lane. Second, J. Carr, Hafod, Swansea, Glamorganshire. Third, R. Teebay. Highly Commended, W. R. Bull; H. Dawson, Camberwell; Miss M. L. Rake; J. W. Smith; R. Teebay; A. Townsend, Old Brompton. Commended, J. Martin; Miss M. L. Rake.

DORKING (Coloured).—First, Lady L. Thynne, Muntham Court, Worthing. Second, Capt. W. Hornby, R.N., Knowsley, Prescot. Third, R. Chatfield, Rock House, Washington, Steyning, Sussex. Highly Commended, Lady J. Cornwallis, Linton Park, Staplehurst; J. Frost, Parham, Suffolk; A. D. Hepburn, Clapham Common; C. H. Wakefield, Malvern Wells. *Hens.*—First, E. H. Garrard, Clopton House, near Broadway. Second, Lady L. Thynne. Highly Commended, Lady L. Thynne; H. W. B. Berwick, Helmsley, York. Commended, R. Chatfield. *Chickens.*—First, Capt. W. Hornby, R.N. Second, Lady L. Thynne. Third, J. Lewry, Bolney, Cuckfield, Sussex. Fourth, W. Tester, Green Trees Farm, Balcombe, Sussex. Highly Commended, Lady J. Cornwallis, Linton Park, Staplehurst; Sir J. Paxton, M.P., Rock Hills, Sydenham; Hon. W. W. Vernon, Ranton Abbey, Stafford; Rev. M. Amphlett, Church Lench Rectory, near Evesham; C. Baker, King's Road, Chelsea; R. Boys, Eastbourne; J. Cobley, Melton Mowbray, Leicester; J. Harris, Melton Mowbray, Leicestershire; A. D. Hepburn, Clapham Common; J. Lewry; J. McCallum. Commended, H. W. B. Berwick, Helmsley, York; J. Frost, Parham, Suffolk; E. H. Garrard, Clopton House, near Broadway; A. Potts, Hoole Hall, Chester; W. Tester. *Pullets.*—First, Sir J. Paxton, M. P. Second, J. Lewry. Highly Commended, Lady J. Cornwallis; J. Lewry; C. H. Wakefield, Malvern Wells. Commended, Lady L. Thynne: W. Dolby, jun., Syston Old Hall, Grantham; P. A. Eagles, Gondhurst, Staplehurst.

DORKINGS (White).—First, N. Antill, Portsea, Hants. Second, Mrs. Beardmore, Uplands, Fareham, Hants. Highly Commended, Mrs. Beardmore; Mrs. H. Fookes, Whitechurch, Blandford, Dorset. *Chickens.*—First and Second, Mrs. Beardmore. Highly Commended, N. Antill; Mrs. H. Fookes. Commended, H. Lingwood, Needham Market, Suffolk.

DORKING COCKS (Coloured and White).—First, Lady L. Thynne, Muntham Court, Worthing. Second, Rev. J. G. A. Baker, Biggleswade, Beds. Third, T. Tatham, Kingsthorpe, Northampton. Highly Commended, Lady M. Macdonald, Woolmer, Liphook, Hants; Lady L. Thynne; Rev. M. Amphlett, Church Lench Rectory, near Evesham; Rev. E. Cadogan, Walton Parsonage, Warwick; T. L. Brown, Chardleigh Green, Chard, Somerset; E. H. Garrard, Clopton House, near Broadway; J. Robinson, Vale House, near Garstang. Commended, Rev. J. F. Newton, Kirby-in-Cleveland, Yorkshire; H. Lingwood, Needham Market, Suffolk; J. Robinson; E. Tudman, Ash Grove, Whitchurch, Salop.

COCHIN-CHINA (Cinnamon and Buff).—First, H. Tomlinson, Balsall Heath Road, Birmingham. Second, Miss V. W. Musgrove, Aughton, near Ormskirk. Third, Mrs. H. Fookes, Whitechurch, Blandford, Dorset. Commended, H. Bates, Edgbaston, Birmingham; T. Stretch, Bootle, Liverpool. *Chickens.*—First, T. Stretch. Second, Miss V. W. Musgrove. Third, S. Statham, Forest Row, Sussex. Highly Commended, Rev. G. Gilbert, Claxton, Norwich; H. Bates; G. Johnson, Farnham, Surrey; J. W. Kelleway, Merston, Isle of Wight; J. McCallum, Hosh Distillery, Crieff, N.B. Commended, Major F. C. Hassard, Hilsea, near Portsmouth; H. Bates.

COCHIN-CHINA (Brown and Partridge-feathered).—First, Miss V. W. Musgrove, Aughton, near Ormskirk. Second, Mrs. B. J. Ford, Countess Weir, Exeter. Third, J. Bolton, Birmingham. Commended, Mrs. E. Herbert, Powick, near Worcester. *Chickens.*—First and Second, E. Tudman, Ash Grove, Whitchurch, Salop. Third, J. Bolton. Commended, J. K. Fowler, Aylesbury, Bucks; T. Stretch, Bootle, near Liverpool.

COCHIN-CHINA (White).—First, R. Chase, Moseley Road, Birmingham. Second, C. R. Titterton, Harborne, near Birmingham. Highly Commended, W. Dawson, Hepton, Yorkshire. Commended, C. R. Titterton. *Chickens.*—First, R. Chase. Second, C. R. Titterton. Highly Commended, W. Dawson Hopton; A. Peters, The Priory, Portsmouth.

Cochin-China Cocks (Coloured and White).—First, J. W. Kelleway, Merston, Isle of Wight. Second, H. Ranson, Holbrook, near Ipswich. Highly Commended, Mrs. H. Fookes, Whitechurch, Blandford, Dorset. Commended, H. Tomlinson, Balsall Heath Road, Birmingham.

Brahma Pootra.—First, R. Teebay, Fulwood, near Preston, Lancashire. Second, G. Botham, Wexham Court, Slough. Highly Commended, W. G. K. Breavington, Vicarage Farm, Hounslow. *Chickens.*—First, Lady L. Thynne, Muntham Court, Worthing. Second, R. Teebay. Highly Commended, W. G. K. Breavington; J. H. Craigie, Woodlands, Chigwell, Essex.

Brahma Pootra Cocks.—First, J. H. Craigie, Woodlands, Chigwell. Second, T. Dunnage, Muswell Hill. Highly Commended, R. Teebay, Fulwood, Lancashire.

Game Fowl (White and Piles).—First, J. Camm, Farnsfield, Notts. Second, G. W. Hardy, Hadyn Place, Birmingham. Third, J. Monsey, Thorne Lane, Norwich. *Chickens.*—First, J. Monsey. Second and Third, W. Burgess, Winterborne, Blandford, Dorset.

Game Fowl (Black-breasted Reds).—First, S. Matthew, Chilton Hill, Stowmarket, Suffolk. Second, E. Archer, Malvern. Third, A. B. Dyas, Madeley, Shropshire. Highly Commended, R. Swift, Southwell, Notts. *Chickens.*—First and Second, W. Cox, Brailsford Hall, Derby. Third, R. Swift. Highly Commended, J. Keable, Thatcham, Newbury, Berks.; S. Matthew; Dr. Sewell, Bridgwater. Commended, E. Archer, Malvern; W. Rogers, Woodbridge, Suffolk.

Game Fowl (Brown-breasted and other Reds, except Black-breasted).—First, H. Parker, Wellington, Salop. Second, V. Sandford, Chatsworth Lodge, Mannamead, Plymouth. Third, E. Pettitt, Halstead, Essex. Highly Commended, E. Archer. Commended, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk; R. Swift, Southwell, Notts. *Chickens.*—First, E. Archer, Malvern. Second, A. B. Dyas, Madeley, Shropshire. Third, H. Parker, Wellington, Salop. Highly Commended, J. H. Braikenridge, Chew Magna, near Bristol; S. Matthew, Chillton Hill, Suffolk. Commended, T. Burgess, jun., Whitchurch, Salop.

Game (Duckwings and other Greys and Blues).—First, G. W. Langdale, Leckonfield Park, Beverley. Second, J. Hindson, Barton House, Everton, Liverpool. Third, R. Swift, Southwell, Notts. Highly Commended, J. Hindson; S. Matthew, Chilton Hill, Stowmarket, Suffolk. *Chickens*—First, W. Dawson, Selly Oak. Second, Hon. W. W. Vernon, Ranton Abbey, Stafford. Third, J. Bradwell, Southwell, Notts. Highly Commended, Mrs. H. T. Frere, Burston Rectory, Diss, Norfolk; T. Hill, jun., Brentwood, Essex. Commended, E. Burton, Truro, Cornwall.

Game (Black- and any other variety).—First, W. Ballard, Woodcote Lodge, Leamington. Second, G. Hellewell, Walkley, near Sheffield. Highly Commended, W. Dawson, Selly Oak. *Chickens.*—First, W. Dawson, Selly Oak. Second, W. Ballard. Highly Commended, V. Sandford, Chatsworth Lodge, Mannamead, Plymouth.

Hamburgh (Golden-pencilled).—First, J. Robinson, Vale House, Garstang. Second, J. Munn, Heath Hill, Stacksteads, near Manchester. Third, T. Choyce, jun., Harris Bridge, near Atherstone. *Chickens.*—First, A. Nuttall, Newchurch, near Manchester. Second, J. Munn. Third, Capt. R. Edgell, Brampford Speke, near Exeter. Highly Commended, R. R. Clayton, Hedgerley Park, Slough, Bucks; G. W. Locke, Newport, Isle of Wight. Commended, E. Payne, Cardiff, Glamorganshire; W. Pierce, Hartford, near Northwich, Cheshire.

Hamburgh (Silver-pencilled).—First, W. Wood, Sheffield. Second, J. Martin, Claines, Worcester. Third, W. Bennett, Brockham Lodge, Betchworth. *Chickens.*—First and Second, J. Martin. Third, W. Wood Highly Commended, F. Buckland, Wraisbury, Bucks; H. W. Griffiths, Worcester. Commended, W. H, Kerr, Worcester.

Hamburgh Cocks (Gold or Silver-pencilled).—First, J. Munn, Stacksteads, near Manchester. Second, E. A. Wilkinson, Birmingham. Highly Commended, F. Armstrong, Haynes, Bedford; W. Bennett, Brockham Lodge, Betchworth; J. Martin, Claines, Worcester.

Hamburgh (Golden-spangled).—First and Second, W. R. Lane, Bristol Road, Birmingham. Third, J. Dixon, Bradford. Commended, G. Brook, Huddersfield. *Chickens.*—First, S. H. Hyde, Ashton-under-Lyne. Second, H. W. B. Berwick, Helmsley, York. Third, G. Brook. Commended, I. Davies, Harborne, near Birmingham; J. Hope, Oldham; T. May, Wolverhampton.

Hamburgh (Silver-spangled).—First, J. Dixon, Bradford. Second, R. Teebay, Fulwood, near Preston, Lancashire. Third, H. Beal, Wexham Grove, Slough. *Chickens.*—First, J. Hope, Oldham. Second, Lady J. Cornwallis, Linton Park, Staplehurst. Third, Mrs. H. Sharp, Bradford, Yorkshire. Highly Commended, H. Carter, Upperthong, Holmfirth; J. Fielding, Newchurch, near Manchester. Commended H. Beal; J. Dixon.

Hamburgh Cocks (Gold or Silver-spangled).—First, S. H. Hyde, Ashton-under-Lyne. Second, Lady J. Cornwallis, Linton Park, Staplehurst. Commended, H. Carter, Upperthong, Holmfirth.

Poland (Black with White Crests).—First and Third, T. P. Edwards, Lyndhurst, Hants. Second, J. Dixon, Bradford, Yorkshire. Highly Commended, Mrs. H. Sharp, Bradford, Yorkshire. Commended, J. Smith, Keighley.

Poland (Golden).—First, J. Dixon, Bradford. Second and Third, Mrs. Pettat, Ashe Rectory, Overton, Hants.

Poland (Silver).—First, J. Dixon, Bradford, Yorkshire. Second, G. C. Adkins, the Lightwoods, near Birmingham. Third, withheld.

Poland Cocks.—First and Second, G. C. Adkins, Birmingham.

Malay.—First, C. Ballance, Taunton, Somerset. Second, J. Rumsey, Shadwell. Highly Commended, W. Manfield, Jun., Portesham and Dorchester. *Chickens.*—First, N. Sykes, jun., Mile End. Second, W. Manfield, jun.

Any other Distinct Breed.—First, E. Hutton, Pudsey, near Leeds (Black Hamburghs). Second, C. Baker, King's Road, Chelsea (Crève Cœur). hird, W. Dawson, Hopton Mirfield, Yorkshire (Sultans). Fourth, Lady . Thynne, Muntham Court, Worthing (Silkies). Highly Commended, [illegible] Coles, Fareham, Hants (Andalusian); J. Hope, Oldham (Black Hamburghs); T. Walton, Charwelton, Daventry (Sultans); Mrs. E. Pigeon, Lympstone, Devon (Black Cochins); T. Wilson, Chapel Street, Park Lane, White Polands). Commended, J. Bowen, Plumstead Common, Kent.

Bantams (Gold-laced).—First, T. H. D. Bayly, Biggleswade, Beds. Second, Rev. G. S. Cruwys, Cruwys Morchard, Tiverton. Highly Commended, W. Cooper, Swallowfield, Reading; M. Leno, Markyate Street, Herts. Commended, S. Ridley Clayton, Sussex.

Bantams (Silver-laced).—First and Second, M. Leno, jun., Markyate Street. [illegible] Commended, Rev. G. S. C[illegible]wys, Cruwys Morchard [illegible] . Bayly, B[illegible], Beds; [illegible] White, Cl[illegible]ham Common. [illegible]

Second, Rev. G. S. Cruwys, Cruwys Morchard, Tiverton. Highly Commended, J. Rumsey, Shadwell; Master E. Wylde, Turnham Green.

Bantams (Black, clean legs).—First, E. Hutton, Pudsey, near Leeds. Second, G. Bradwell, Southwell, Notts. Highly Commended, G. Bradwell.

Bantams (Game).—First, R. B. Postans, Brentwood, Essex. Second, R. Swift, Southwell, Notts. Third, F. S. Allen, Dunsland, Glanmire, county Cork. Highly Commended, Right Hon. Lady Ashburton, the Grange, Alresford, Hants; J. Camm, Farnsfield, Notts; M. Leno, jun., Markyate Street, Herts; R. B. Postans; H. Shield, Northampton. Commended, T. H. D. Bayly, Biggleswade, Beds; E. Burton, Truro, Cornwall; R. Hawksley, jun., Southwell, Notts.

Bantams (any other variety).—First, Mrs. Green, Lower Cheam, Surrey (Sian Kin ti · haw, from Woosung, China). Second, G. Datt, Halloughton, Southwell, Notts (Booted Bantams). Highly Commended, W. Brown, Shute, Axminster, Devon (Silk Bantams, from Algiers); H. Shield, Northampton (Spangled Game Bantams).

Bantam Cocks.—First, W. S. Forrest, Greenhithe, Kent. Second, H. Adney, Lympstone, Devon. Highly Commended, T. H. D. Bayly, Ickwell House, Biggleswade, Beds.; Mrs. Beardmore, Fareham, Hants; O. Nicholson, Fareham, Hants; H. Shield, Northampton; R. Hawksley, jun.

Geese (White).—First and Second, W. Manfield, jun., Portesham and Dorchester. Highly Commended, W. Manfield, jun.

Geese (Grey and Mottled).—First, J. K. Fowler, Aylesbury, Bucks. Second, W. Brown, Redgate Farm, Shute, Devon.

Ducks (Aylesbury).—First and Second, J. K. Fowler, Aylesbury, Bucks. Third Mrs. Pattisson, Maldon, Essex. Highly Commended, J. K. Fowler; J. Harris, Melton Mowbray, Leicestershire. Commended, W. Syson, Debach, near Woodbridge, Suffolk.

Ducks (Rouen).—First, J. K. Fowler, Aylesbury, Bucks. Second, W. G. K. Breavington, Vicarage Farm, Hounslow. Third, C. Punchard, Blunts Hall Suffolk. Highly Commended, Rev. H. G. Baily, Swindon, Wilts; W. G. K. Breavington. J. K. Fowler.

Ducks (Black).—First, C. Baker, King's Road, Chelsea. Second, J. Martin, Mildenham Mill, Worcester. Third, Mrs. Beardmore, Fareham, Hants. Highly Commended, C. Ballance, Taunton, Somerset; G. S. Salisbury, Rowde, Devizes, Wilts. Commended, J. W. Smith, Oundle, Northamptonshire.

Ducks (any other variety).—First, T. H. D. Bayly, Biggleswade, Beds. (Call Ducks). Third, T. Smith, Lewes, Sussex (Muscovy Ducks). Second, withheld.

Ornamental Water Fowl.—First, T. H. D. Bayly, Biggleswade, Beds. (Sebastopol Geese). Second, C. Baker, King's Road, Chelsea (Bernicle Geese). Third, W. Manfield, Jun., Portesham and Dorchester (China Geese).

Turkeys.—First. J. Smith, Breeder Hills, Grantham. Second, W. Manfield, jun., Portesham and Dorchester. Third, R. Brand, Great Shelford, Cambridgeshire. *Poults.* First, Second, and Third, R. Brand, Great Shelford, Cambridgeshire. Highly Commended, Lady M. Macdonald, Wilmot, Liphook, Hants; Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk; J. Smith, Breeder Hills, Grantham. Commended, E. Guy, Eaton, near Grantham.

Gold and Silver Pheasants.—First, S. C. Betty, Glo'ster Gate, Regent's Park (Gold). Second, Mrs. Pattisson, Maldon, Essex (Silver).

Pheasants (any other variety).—First, M. Leno, jun., Markyate Street, Herts (Chinese Ring-neck). Second, C. Baker, King's Road, Chelsea (Chinese Ring-neck).

Sweepstakes for Game Cocks.—First, A. B. Dyas, Madeley, Shropshire. Second, W. Robson, Carlton Road, Worksop. Third and Seventh, J. Hindson, Barton House, Liverpool Fourth, J. Keable, Thatcham, Newbury, Berks. Fifth, V. Sandford, Chatsworth Lodge, Mannamead, Plymouth. Sixth, E. Archer, Malvern. Highly Commended, Hon. W. W. Vernon, Ranton Abbey, Stafford; E. Archer; S. Matthew, Chillton Hill, Stowmarket, Suffolk; H. E. Porter, York Place, St. John's Wood; W. Robson, Worksop.

PIGEONS AND RABBITS.

The Show of Pigeons and Rabbits at the Crystal Palace was more than usually numerous, there being 814 pens of the former and 109 of the latter exhibited. In respect both of the number and quality there was a great improvement on all the previous Shows. We should be glad to have been able to say the same of the arrangements, which were decidedly inferior to those of many fifth-rate local exhibitions. The majority of the birds—more especially those which required the closest and most minute inspection to distinguish their points and properties—were arranged on two sides of a narrow alley barely two yards in width, one end of which only was lighted. The pens were placed in three tiers or rows one above the other, so that it was practically impossible to see the birds in the lower tier; and after spending four hours in the inspection of the Pigeons and Rabbits, we left without having had an opportunity of seeing several of the prize birds. As if to add to the inconvenience of this narrow crowded passage, the water-pans were placed outside; and as they were nearly as low as the level of the knee, they were constantly being upset over the dresses of the ladies and the coat-tails of the gentlemen. When we state that the evils here complained of could have been readily obviated by moving one side of the alley back some 20 feet or even 10 feet, into an empty space behind, it is obvious we do not complain of the arrangements without a cause.

Again, except in the cases of the pens of one or two exhibitors who were shrewd enough to provide their own food-pans, there were no means of feeding the Carriers except by throwing the food on the floor of the pens. This is always an objectionable plan, as the food becomes contaminated with the dung and injure [illegible] the case o[illegible] Carriers it is a fatal practice, for a stout bird cannot see before it to pick up a bean, and often makes a score of vain attempts in succession.

The first class was for Powter cocks. The second and third prize went to birds both belonging to Mr. Rake, a Blue and a Black Pied, both are standard birds that have won numerous prizes. The first prize was awarded to a coarse, thick-bodied Mealy, that was nearly heavy enough to win in the Runt class.

In Powter hens Mr. Rake won with an excellent Blue. Mr. Evans taking second with a very superior long Grizzle that we noticed at the last summer Show.

In Carriers a revolution was effected: the Plymouth birds, distinguished by their remarkable style and carriage, took away many of the prizes from the more heavily-wattled birds of other exhibitors. In Black cocks, Mr. Goss, of Plymouth, took first. Mr. Stevens second, and Mr. Colley third, with a very stout bird. In Blues, Mr. Colley was again successful.

In the Dragon classes, Mr. Stevens took first with a pair of Yellows, very good in colour.

In Almond Tumblers, the first prize went to a pen of Mr. Corker's, unquestionably the best pair in the Show, although the cock was rather dark in colour from age, and the wonderful short face of the hen had been evidently improved by judicious management. Mr. Rake's second and third prize pens were good, but rather deficient in colour.

In Short-faced Mottles, Mr. Corker was again successful with a pair of good Blacks, closely followed by Mr. Esquilant's second-prize pen.

In the Short-faced Baldhead and Beard classes, the prizes went to invisible blues, for from the position of the pens in the bottom row of the narrow alley, we found it impossible to see the winning birds, although we have seen them on other occasions, and know them to be very good.

We now come to a new class, one for Kites, Agates, and other self-coloured Short-faced Tumblers. We claim credit to ourselves for the establishment of this class, its existence being evidently owing to our remarks on the practice followed at the last Show of giving prizes to Kites as self-coloured Tumblers. The prize was awarded to Mr. Percivall's Kites.

Jacobins as a class were neither numerous nor good.

In Blue and Silver Owls the competition was entirely between two pens belonging to Mr. Morris and Mr. Rake. The prize was awarded to the former, the latter being highly commended. Several fanciers thought the hen of Mr. Rake so much better in the head than that of Mr. Morris, that they would have transferred the position.

In Owls of any other colour Mr Rake won with the most perfect pair of small Whites we have seen; as a proof of the estimation in which these birds are held, we may state that two hens not commended were claimed at £5. The Judges append the remark that this was the most beautiful class of Owls ever exhibited; and, yet, strange to say, they did not commend a single pen! It cannot be said that the whole class were commended, inasmuch as there were two or three very inferior pens contained in it.

In the class of Turbits the first-prize birds of Major Cook appeared to want the characteristic frog-like head so peculiar to the breed.

In the Black Fantails the prize was withheld. The White variety prize was awarded to turned-crowned birds. The class of Blue consisted of three entries only, and contained nothing remarkable.

In Barbs Mr. Rake won with good Blacks, Mr. P. Jones with Reds.

The Mottled Trumpeters were not remarkable; in the White or other coloured the prize was awarded to a middling pen of Blacks, Mr. Key's well-known pair of Whites not being noticed.

The class of Runts was very good. Mr. Green sent in six good pens, winning with a good pair of Blues; his highly commended Silvers we thought unusually excellent.

The Extra Variety class was very good. Mr. Goore most deservedly took first for a new variety termed Russians; they may be described as rock-headed birds, with bald heads and a turn crown like a Blue Priest; but the entire of the remainder of the plumage was of the most delicate silver, and the absence of bars on the wings made them especially striking.

Two pairs of the coarse Long-faced Beards, so much esteemed by many of the London fanciers, were shown, but they did not attract the notice of the Judges.

Upwards of 100 pens of Rabbits were exhibited, constituting by far the best collection ever seen in the Crystal Palace. The first prize for the longest ears was given to a Tortoiseshell buck, age seven months, belonging to Messrs. Guest & Coleman. His ears were longer than those of any Rabbit previously shown here, measuring over 23 inches, and, doubtless, with a little gentle extension they might be made to stretch still longer.

Mr. Stedman won both prizes for Black and White.

The Yellow and White of Mr. Hindes was a very good rich-coloured doe. Mr. Morris' prize Tortoiseshell was in first-rate condition. Messrs. Guest & Coleman's Blue and White prize doe was remarkable for the correctness of its markings; and the colour of Mr. Hinck's Fawn doe was very good. For weight the prize went to a Grey and White doe of Mr. Rodgers. We could not learn her exact weight, but were informed that she was the heaviest ever exhibited at the Palace.

The prizes for foreign Rabbits were awarded to a Grey Alpine buck belonging to Dr. R. Hogg and a buff-coloured Silver Grey belonging to Mr. Vipan.

As a whole the show of Rabbits far exceeded in quality as well as number those of previous years.

PIGEONS.

Powters or Croppers (any colour).—*Cocks.*—First, T. H. Evans, Lambeth Walk. Second and Third, M. Rake, Brandon Hill, Bristol. Highly Commended, E. L. Corker, Croydon; R. Fulton, Deptford. Commended, T. H. Evans; C J. Samuels, Victoria Park, Manchester. (A good class.) *Hens.*—First, M. Rake. Second and Third, T. H. Evans. Highly Commended, E. L. Corker. Commended, C. J. Samuels.

Carriers (Black and Dun) – *Cocks.*—First P. Goss, Plymouth. Second, F. G. Stevens, Axminster, Devon. Third, T. Colley, Sheffield. Highly Commended, J. Bairstow, Halifax; P. Goss; E. J. J. Holmes, Lewisham. Commended, Major F. C. Hassard, Hilsea, Portsmouth; E. L. Corker, Croydon; M. Rake, Brandon Hill, Bristol. *Any other colour.*—First and Second, T Colley. Highly Commended, J. Bairstow. *Hens* (Black and Dun).—First and Second, P. Goss. Third, E. L. Corker. Highly Commended, E. L. Corker; P. Goss. (A good class). *Any other colour.*—First, T. Colley. Second, J. Bairstow.

Dragons.—*Blue.*—Prize, G. Graham, New Charlton. Highly Commended, A. L. Silvester, Birmingham; G. F. Treadaway, Paddington. *Any other Colour.*—Prize, F. G. Stevens, Axminster. Devon. Highly Commended, C. J. Samuels, the Elms, Victoria Park, Manchester; F. G. Stevens.

Almond Tumblers.—First, E. L. Corker, Croydon. Second and Third, M. Rake, Brandon Hill, Bristol.

Short-faced Mottles.—First, E. L. Corker, Croydon. Second, F. Esquilant, Oxford Street.

Short-faced Baldheads.—First, F. Esquilant, Oxford Street. Second, J. W. Edge, Aston New Town, Birmingham.

Short-faced Beards.—First, E. Archer, Malvern, Second, M. Rake, Brandon Hill, Bristol.

Short-faced Tumblers (Self Colour).—First, J. Percivall, Rye Lane, Peckham. Second, W. Cannan, Bradford, Yorkshire. Highly Commended, E. L. Corker, Croydon.

Kites, Agates, Duns, and Grizzles.—Prize, J. Percivall, Rye Lane, Peckham.

Jacobins.—First, G. F. Nicholls, the Moors, near Cheltenham. Second, F. Esquilant, Oxford Street. Commended, F. G. Stevens, Axminster, Devon.

Owls (Blue or Silver).—Prize, H. Morris, Silverdale Lodge, Forest Hill. Highly Commended, M. Rake, Brandon Hill, Bristol. Commended, Rev. F. Watson, Woodbridge, Suffolk; W. Cannan, Bradford, Yorks; J. Thomas, Camberwell. *Yellow or any other colour.*—Prize, M. Rake, Brandon Hill, Bristol. (Most beautiful class of Owls ever exhibited.)

Nuns.—First, F. Key, Beverley. Second, G. C. Adkins, the Lightwoods, near Birmingham.

Turbits.—First, Major W. S. Cook, Stoke St. Mary, Somerset. Second, G. F. Nicholls the Moors, near Cheltenham. Third, G. C. Adkins, the Lightwoods, near Birmingham. Highly Commended, F. E. Else, Bayswater.

Fantails.—*White.*—Prize, E. Archer, Forest Hill, Kent. Highly Commended, G. Goore, Aigburth Vale, near Liverpool. Commended, H Morris, Silverdale Lodge, Forest Hill. *Blue.*—Prize, J. Baily, jun., Mount Street.

Barbs.—*Black.*—Prize, M. Rake, Brandon Hill, Bristol. Highly Commended, C. Baker, King's Road, Chelsea; P H. Jones, Fulham; F. G. Stevens, Axminster. *Yellow, or any other colour.*—Prize, P. H. Jones. Highly Commended, F. G. Stevens. Commended, M. Rake.

Magpies.—First, G. F. Nicholls, the Moors, near Cheltenham. Second, G. Fleming, Albert Road, Peckham. Third, F. E. Else, Westbourne Grove, Bayswater. Highly Commended, F. G. Stevens, Axminster, Devon.

Trumpeters.—*Black Mottled.*—Prize, J. Baily, jun., Mount Street. Commended, W. Cannan, Bradford, Yorkshire; F. G. Stevens, Axminster, Devon. *White, or any other variety.*—Prize, J. Baily, Jun. Commended, J. Baily, jun.; S. Wills.

Spanish and Leghorn Runts.—First, T. D. Green, Saffron Walden, Essex. Second, F. Key, Beverley. Highly Commended, C. Baker, King's Road, Chelsea; T. D. Green. (A very good class).

For any New or Deserving Variety (not before mentioned).—First, G. Goore, Aigburth Vale, near Liverpool (Russians). Second, H. Morris, Silverdale Lodge, Forrest Hill. Third, J. Simmons, Fareham, Hants (Foreign Wood Pigeons). Fourth, E. A. Hargrove, Villa Road, Birmingham. Commended, J. Baily, Jun., Mount Street (Isabels).

RABBITS.

Longest Ears.—First, Messrs. Guest & Coleman, Birmingham (Tortoiseshell Buck). Second, J. Hincks, jun., Hall Green, near Birmingham (Grey Buck). Highly Commended, J. Angus, Bull Fields, Woolwich (Sooty Fawn Buck); Messrs. Soles & Butler, Orchard Place, Woolwich (Black and White Buck).

Black and White.—First and Second, A. Stedman, Oxted, Surrey (Doe). Highly Commended, J. Hewitt, Birmingham (Buck); G. Jones, Birmingham (Buck). Commended, Messrs. Guest & Coleman, Birmingham (Buck); Miss M. Hawkesley, Edgware Road (Doe); C. Sellen, Surrey (Buck).

Yellow and White.—First, H. Hindes, jun., Norwich (Doe). Second, J. Hincks, jun., Birmingham (Doe). Highly Commended, J. Hincks, jun.

(Buck); H Hindes, Jun. (Buck). Commended, R. B. Newsom, Brixton Hill (Buck); J. G. Quick, Portland Town (Buck); A. Stedman, Oxted, Surrey (Buck).

Tortoiseshell.—First and Second, J. Morris, jun., Silverdale Lodge, Forrest Hill (Doe). Commended, Miss M. Hawkesley, Edgware Road (Buck; J. Hincks, jun., Birmingham (Doe); H. Hindes, jun., Norwich (Buck); H. Hodge, Notting Hill (Doe); C. Sellen, Surrey (Buck).

Blue and White.—First, Messrs. Guest & Coleman, Birmingham (Doe). Second, Rev. C. P. McCarthy, Walham Green (Buck. Highly Commended, W. Griffin, Bull Fields, Plumstead (Doe); J. Hewitt, Birmingham (Buck). Commended, W. Griffin; Messrs Guest & Coleman.

Grey and White.—Commended, J. Stinton, Holloway (Buck).

Self Colour.—First, J. Hincks, jun., Hall Green, near Birmingham (Fawn Doe). Second, E. Hockley, Greenwich (Fawn Buck). Highly Commended, E. W. Burford, Belgrave Gate, Leicester (Fawn Buck and Grey Buck); J. Hincks, jun. (Fawn Doe). Commended, J. Grover, Deptford (White Buck); W. Nott, Chelsea (Doe); C. Sellen, Surrey (Sooty Fawn Doe); Messrs Sole & Butler, Woolwich (Black Buck); D. Thorne, Holloway (Buck).

For Weight.—First, H. Rodgers, Brampton, near Chesterfield (Brown and White Doe). Second, G. Jones, Market Hall, Birmingham (Fawn Doe). Highly Commended, C. Collins, Moland Street Birmingham (Yellow and White Doe); G. Rome, Southover Street, Brighton (Tortoiseshell Doe). Commended, E. Brough, Union Street, Leek; J. G. Quick, Henry Street Portland Town (Tortoiseshell Doe).

Foreign Rabbits.—First, Dr R. Hogg, Winchester Street, Pimlico (Alpine Buck.) Second, E. J. Vipan, St. Ives, Hunts (Buff-coloured Silver Grey Buck).

Judges of Poultry.—Messrs. Andrews, Baily, and Hewitt. Pigeons.—Messrs. Bellamy and Cottle. Rabbits.—Messrs. Fox, Housden, and Webster.

BIRMINGHAM POULTRY EXHIBITION.

I have perused with interest the excellent report of this our greatest of poultry shows, inserted in your last week's paper. It leaves but little to be said on the subject of the poultry generally, still there were fresh arrangements this year that seemed to arrest the attention of exhibitors in no small degree, and that from their importance call for especial mention. It appears that the managing Committee, with the laudable intention of rendering the Exhibition at Bingley Hall, as a whole, a subject of still more general interest, have this year contracted the accommodation hitherto enjoyed by the poultry to that bay alone that was built expressly for this department of the Exhibition. For some years past the Geese, the Turkeys, and the Ducks, together with the whole of the Pigeons, have found their fixture outside this bay, and being a most extensive portion of the whole, relieved the crowding that must of necessity have taken place had they been restricted exclusively to the portion of the building just named. The ground they have hitherto occupied has this year been given up to a display of agricultural implements. No doubt the inspection of this fresh feature was a matter of interest to many visitors, solely on account of its novelty; but to the owners of no small number of the valuable pens of poultry exhibited, it afforded rather a subject for regret that any such change had been instituted.

To say that the Bingley Hall Exhibition derives almost the whole of its present popularity from its poultry is a suggestion few, if any, will deny, and consequently whether to limit this particular portion of the Show is a prudent measure is open to much doubt and question. Having, therefore, to grapple with the combined difficulties of an increased amount of entries, coupled with a greatly-lessened amount of space, the only course that possibly could be pursued, was decreasing the size of each particular pen very considerably. As a farther relief, a cock and *two* hens, instead of a cock and *three* hens (a feature in poultry shows in which Birmingham has hitherto stood without a rival), became in 1861 a newly-appointed regulation. With this brief explicative, it is well to briefly jot down the results. To any one in the slightest degree conversant with poultry matters, it was painfully apparent that the pens allotted to the Dorkings, Cochins, Brahma Pootras—in fact, to each of the very largest varieties, were unquestionably too small. It was only with difficulty such birds could pass each other, and for two out of the three birds (so cooped) to stand together at the front of their pen proved almost an impossibility. The owners of such poultry could scarcely be supposed to look approvingly on this curtailment, whilst intending purchasers and visitors generally were obliged to be satisfied with a less satisfactory inspection than in years past.

The taking away one hen from each pen, deprived likewise [illegible] poultry amateurs desirous of purchasing of one of the greatest boons Birmingham always offered them. A pen purchased with three well-matched hens, at the Shows hitherto, had [illegible] advantage in case from death [illegible]dition one hen went amiss, the two remaining ones still held good for any other meeting in the kingdom. Such a mishap in the case of two hens only obviously throws the purchaser into the shade altogether, or subjects him, at the least, to the greatly-increased difficulty and expense of finding a match single bird elsewhere.

In the smaller varieties of poultry and the Pigeons, the accommodation permitted to each pen was unquestionably quite sufficient.

To all breeders of poultry, it is needless to do more than mention, that the absolute injury arising from confinement is always proportionate to the room or compression permitted them, shortness of space, too, telling still more severely as each day is added to their imprisonment. It is the prevailing hope of most exhibitors of the larger varieties, that in future some little amelioration of present plans will be granted them.

I cannot forbear a brief reference to a circumstance that seemed to cast a very general gloom among the poultry amateurs assembled, arising from the death of that well-known local amateur and breeder, Mr. George Peters. Twelve pens were entered for exhibition at this Show, but only the day preceding the arbitrations their owner was himself consigned to the tomb, and, therefore, the birds were not forwarded.

By the death of Mr. Peters, an extended circle of his equals are deprived of a really frank and open-hearted friend, whilst the poor of his neighbourhood deplore their still more irreparable loss of ever-willing sympathy and advice, combined with the ready hand of a truly liberal and generous benefactor.

Upon reaching Birmingham on Monday last, I was surprised to find Mr. Hewitt had not assisted in awarding the prizes. Perhaps some of your readers can mention why his services were rejected. Does Mr. Hewitt charge more than the other Judges do, or do the Committee consider him after so much practice incapable? I fancy, for the last ten years Mr. Hewitt has judged at least six shows for either of the others' one.—Inquisitive.

[The above is from a well-known poultry exhibitor. We were not aware, until we saw a list of the Judges, that Mr. Hewitt was not one of them; and we now only express the hope of all honest poultry exhibitors when we say that we trust Mr. Hewitt's absence from that list will not be permanent. We believe it will not, for we are informed that it arose from causes easily removeable, and, therefore, no public discussion is needed. —Eds.]

THE THREE GREAT CENTRAL SHOWS OF ENGLAND.

At the time of presenting a testimonial to Mr. Joseph Stephenson, C.E., at Darlington, for "his exertions during nine years in superintending the carrying out of the building in which the Northern Counties Fat Cattle Society held its exhibitions," F. Newburn, jun., Esq., introduced the following suggestion:—

"This year our clashing with Birmingham has been sadly detrimental. I have always said, and maintain, that this country for such displays of fat stock and poultry is divided into three centres. London for the south, Birmingham for the midland, and Darlington for the northern counties. It is absurd to say, Let us be independent of everybody—we can't. If we hold meetings when our exhibitors cannot appear at Birmingham, we do them injustice and ourselves harm. But if we avoid Birmingham, well and good; and if we steer clear both of it and Smithfield, so much the better."

We consider that suggestion deserving of the most favourable attention of the Committees of the three Societies, for it would be conducive to the interests both of those Societies and exhibitors if they were held by previous agreement at intervals of three or four days during the first half of December. It would enable more exhibitors to be at each, and it would give the exhibitors chances of obtaining more prizes.

At the dinner of the Northern Counties Society, Mr. Newburn remarked upon a rather novel point from which to view the benefits derived from such Exhibitions. He said:—

"If they took the aggregate number of animals shown, they found there were about 200 cattle, sheep, and pigs, and the aggregate number of birds shown was 1104. They might say [illegible] nonsense talking about eating uch birds, and he should cry with them, 'hold hard,' because, ot only the birds would be an extremely expensive dish, but it vould be a downright sin to kill such very beautiful specimens. But to produce any single object of competition they must have t least ten to choose from. He addressed agriculturists, and elieved they would tell him that average was too low—he knew, n poultry and pigeons, it was under the mark. But let it stand. Therefore, if they multiplied 1304 by 10, it had actually taken 13,040 animals to produce that show. That was one of the easons why a display of the feathered tribe and fat stock was of mmense use, owing to the number of drafts that must be taken rom the herd, the flock, the pigs, and collections of poultry, o improve the general market for consumable food."

FATTENING GEESE QUICKLY AND CHEAPLY.

A **friend** informs me that his Geese have fattened in much ess time than heretofore, by feeding them on pulped mangold vith a good sprinkling of barleymeal. I have ordered my ailiff to try it (although hardly a fair trial, as the Geese have 'been up" some time) and will, if you wish, inform you of the esult. I should like to know if any of your readers have ried it. Bentall's pulper is the one used.—C. T. H., *Dorset.*

POULTRY FOOD AND LAYING HENS.

Seeing many of your young correspondents inquiring respectng food for poultry, especially for laying hens, perhaps the folowing information may be of some use to young fanciers. I ave tried many different sorts of food, but none I think so avourable for plumage, condition, and egg-producing combined, s the following.

In early morning I feed upon warm mashed potatoes and rushed oats, and each alternate day at noon with whole barley nd oats. Every night I give a warm mash of barleymeal, fine ran, and crushed oats, always having plenty of fresh clean vater given twice a-day, especially when the birds are shut up in ens, and I turn them out two or three hours every other day o have a run amongst the grass.

My stock consists of Spanish, Cochins (Buff and Partridge), ame, and Dorkings, and a few common hens for nurses.

Since I fed on the above-mentioned food, I find my fowls eat ss and lay better, and are in much better plumage and condion than when fed on whole grain.

My pullets (Cochin, Spanish, and Dorking), have been laying r the last two months and upwards. My Cochin hens of two r three years of age have been laying, some a month and some fortnight ago. I have not one out of ten old birds that has ot laid upwards of a fortnight. My three-year-old Dorking ame and Hamburgh hens, are also laying. I may also ention that I feed entirely on this food, both exhibition and neral stock fowls, and, I may add, I have not had one sickly rd this year.—Fancier.

SOLUTION OF THE "SUPER-POSING" PROBLEM.

In the following letter, that excellent apiarian "B. & W." ot only hits off the super-posing difficulty with his usual ability, ut so completely reconciles the apparent discrepancy between e results of my own experience and that of my courteousopment, Mr. John Brown, that I have not the slightest hesitation giving my unqualified assent to the conclusion at which he s arrived.—A Devonshire Bee-keeper.

"My own experience in the super-posing of hives in the anner in question is simply nil. But, if I had been asked my inion and advice by "A. W.," I should certainly have given almost in your very words, judging from my experience of the y in which bees desert supers and glasses full of honey, proled the main hive be well supplied. I have no hesitation in ying that in the ordinary practice of the storifying system, as ght by Dr. Bevan or modified by every apiarian of my acaintance, including yourself, bees would not ascend into the per-posed hive provided the lower one were tolerably wellled with sealed honeycomb. At the same time, I am equally opinion that in bar-hives, if the top board of the lower hive re removed and the bees were allowed an uninterrupted passage upwards from every comb, the bees would ascend and make the super-posed hive their winter quarters carrying, up with them by degrees all the honey stored below; and this even were every external aperture closed save the entrance to the lower hive. In my own case I never have removed the top board, and therefore I have invariably found the bees, after a time, descend to and remain in the lower hive, both in cases where I have super-added brood and bees from other hives in greater or less quantities, or when the bees have themselves occupied and laid up stores in a super. If I read the statement correctly, at page 78, I infer that in the north, when they super-pose, they allow the bees a free passage upwards from every comb, which can only be by removing the top-board.*

If this be so, all this disturbance has been about nothing. The northern practice makes of two hives but one; our southern practice leaves the hives two; and so "A Renfrewshire Bee-keeper" is speaking of one thing and you of a totally different and distinct matter. Therefore, guided by our present knowledge, arising out of this recent correspondence, I should give to "A. W." this better advice—to follow the northern plan if he wished his bees to take possession of the upper hive, and your advice if he wished the bees to descend. In thus saying, while I seem to side with the former, it is only in regard to the better plan for effecting "A. W's." purpose. I am not the less of opinion with you that our southern mode of procedure would terminate as you have indicated in your remarks in page 38.—B. & W.

LIGURIAN BEES—EARLY BREEDING.

Saturday the 7th inst., being warm and fine, I took advantage of it to shift into a dry box a stock of Ligurians which I had previously remarked as suffering from an excess of moisture during the severe weather of November. On emptying the hive, however, I found that I might have spared my labour, as far as dampness was concerned; the box being perfectly dry, although discoloured by the recent presence of internal moisture.

Whilst transferring the combs and bees, I, as a matter of course, sought an interview with her majesty, whom I was pleased to find in apparently excellent health. I was also more than pleased at discovering that breeding had fairly commenced; some hundreds of eggs having been deposited in one of the combs. It may be remembered that during the severest cold of last January, I found a mass of sealed brood in a comb which fell out of an Italian stock. These circumstances appear to prove that whilst Ligurian bees (like the common species) cease breeding in October, egg-laying recommences with them early in December, and is continued during the winter. I have reason to believe that breeding is now pretty general amongst all my stocks; but as I have no black bees to compare them with, I should be glad if any of the apiarian readers of The Journal of Horticulture, who possess facilities for making such observations, would kindly state if egg-laying has yet commenced amongst their black bees. That the Ligurians possess a decided superiority in this respect is the present opinion of—A Devonshire Bee-keeper.

IRREGULAR PRODUCTION OF DRONES.

I have often thought that the following incident that occurred in my apiary in the year 1859 was rather singular. I send you the account of it, and if it is worth a place in your Journal you can publish it.

On the night of the 16th of January, 1859, a wooden house containing two straw hives, prime swarms of the previous summer, was blown over on its roof in a gale of wind—a pleasant sight on looking out of one's bedroom window the first thing in the morning. You may be sure I dressed quickly. When I opened the door, which I was enabled to do with the house still on its roof, a melancholy sight presented itself—both hives upside down, one with the combs very much damaged. I threw a tablecloth over it and brought it into the house. The day proved fine and sunny. I placed the hive on a chair in an unfurnished room facing south.

I fortunately had a wooden hive with a window in it, about half filled with new empty combs, only worker-comb. I placed this hive in the window on a shelf wedged up, and put some honey under. I then uncovered the hive—numbers of the bees flew to the window. I cut out the damaged combs, handed them to my sister who swept them off with a feather into the window. At last I found the queen, placed her under the hive, and in a short time all the bees settled on the combs, and a pleased hum was the result.

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* Or withdrawing all the slides in hives of the Stewarton construction. —A Devonshire Bee-keeper.

I kept this hive in the sitting-room, feeding the bees under a bell-glass at the top of the hive, taking them to the garden every fine day, removing the zinc at the entrance, and bringing them in at night. I supplied them with pollen out of their own hive, which they refused as soon as they gathered fresh from the flowers. I examined the broken combs, and could not discover a single egg.

Now this hive was upset on the 16th of January. On the 6th of February a dead grub was brought, not a very young one. Now comes the strange part of the story. On the 23rd of the same month, I found a small drone at the entrance of the hive; it was fully developed, alive, but not larger than a worker. I brought it into the house but it soon died. I could not see, on looking through the window of the hive, that any drone-comb had been built. No other premature drones made their appearance. This hive throve very well the next summer.—J. L.

[The irregular production of drones was noticed by "A Devonshire Bee-keeper," in pages 350 and 431 of our last volume. We are inclined to believe that it takes place more often than is generally supposed. It would appear that the delicate apparatus which regulates the sex of the egg does not invariably fulfil its allotted functions, and hence the occasional deposit of a drone egg in a worker-cell which results in the production of a small drone as described by our correspondent.]

APIARIAN NOTES.

Corsair Bees.—Your correspondent "S. B." complains of an attack made by some Ligurian bees on his "black bees." In certain populous localities in Great Britain, there are numerous hordes of mankind who do little or no work, and live upon their richer neighbours. So it is with bees, if a strict watch is not kept upon them. One of the "besetting sins" of our favourites, the black bees, is their vile propensity to plunder, generally, too, the strong against the weak hives. In a large apiary which amounted, at one time, to twenty-six stocks, besides show unicomb-hives, when it was discovered that any one stock of bees had taken to plunder, my plan was to endeavour to watch the flight of the "Corsairs," as Dr. Bevan called them, and if it were discovered in the same apiary to apply the brimstone match to the plunderers, for, be assured, if bees once take to this mode of increasing their store, they never give it up, like some dogs that have tasted the blood of sheep.

I have known a stock increase in weight, 15 lbs. in one week, by plunder. I have tried various remedies; one removing the plundered hive several hundred yards; another plan, closing the entrance to the plundered hive at night, in the morning the plunderers will be in a busy cluster attempting to get in. Kill them all on the spot, be not afraid of sting, these thieves never sting, because they are not defending their own house, they are arrant cowards always when tackled.

It seems evident that the Ligurian bees have the same bad qualities as their black neighbours, and I advise "S. B." never, on any account, to allow any honey or sweets of any kind to ocse out of his bell-glasses or any other part of the boxes or hives, as the bees have an extraordinary instinct of communicating to each other where they can obtain honey. In the autumn and spring these attacks are the most frequent.

The entrances of all hives, in spring and autumn, should be contracted as much as possible. I have known bees to fly the distance of 1500 yards to attack a stock, and he must be an acute watcher who can possess a dozen stocks of bees through bad seasons, without having suffered from this; the greatest vigilance is required to prevent it, for it is part of their nature whether the brood-combs are above or below.

Super-posed Hive.—I agree with Mr. Fox that the top hive does not become the stock-hive. I have had many of Nutt's hives in former days, and have always found the bottom hive the stock-hive after several years remaining double, still, there may be exceptions, but I believe very few to this rule.

Driving Bees.—I candidly [illegible] that I never had any [illegible] that it seldom answers. How your correspondent "Alpha" can induce the whole of his bees to leave an inverted full hive, even when the hive rests on the sides of a metal pot, I cannot conceive. I have always found bees most difficult to drive from their brood-combs, to which they are more attached than to those full of honey. Mr. Nutt, who was certainly a good manager, although now considered old-fashioned, tried driving until he gave it up altogether in disgust. The irritation produced is excessive, and renders the bees quite furious even in driving in the usual way, with the full hive placed evenly under the empty one. —H. W. Newman, *Hillside, Cheltenham.*

Cooking Dioscorea battatas.—Wash, but do not peel the Yam; put it in cold water and boil till tender. Scrape off the outer skin and cut lengthways in thin slices. Fry of a pale brown, in eggs and crumbs of bread. Send to table dry and crisp.

OUR LETTER BOX.

Fowls in a Common Yard (*E. P.*).—If you feed them regularly in their own roosting-place, they will soon know their own. No confinement will cure cocks having the propensity to fight. You had better let your fowls out, and let the rivals fight it out if you cannot divide the yard between yourself and neighbour. Cannot you have a wire-net partition?

Supply of Eggs (*One who wishes for Profitable Fowls*).—You do not state the nature of the run your fowls have. It should be wholly, or at least partly grass. We believe Cochins and Brahmas to be the best winter layers, but with them as with everything else, it is a question of age. It is quite impossible to state any quantity of food as sufficient for a yard of fowls. If they are taken to when they are thin, they eat twice as much when they are improving as they will when they are well up in condition. No particular weight of food should be given at a time, but just so much as the birds can eat, and no more. The food should be ground oats mixed with water. They should be fed with this morning and evening, as much each time as they will eat readily—that is, run after. The food is wasted, and the fowls are badly fed when any of the former lies on the ground, or when they can get it at any time. The two meals we have spoken of are enough, if in the middle of the day they have some whole barley thrown to them and scattered about. The five cockerels are enough, if you want only eggs; but if you have any idea of hatching they are neither old nor numerous enough. For sixty hens and pullets in January you should have eight cocks, and they should be nine months old. If one or two are adults so much the better. The Spanish are profitable layers, their eggs are numerous, and very large. They do not lay till they are nine months old. Cochins and Brahmas lay at six, and often before. If your fowls are confined, and cannot get at green food, it must be supplied to them by hand. They must also have dust, gravel, and lime at hand. It has been a bad time for eggs, but the pullets are now beginning to lay.

Cleaning White Cochins' Feathers (*A Subscriber*).—Wash them with water and common yellow soap. When clean wipe them as dry as you can, put them in a basket with some clean, soft straw, and put them before a fire till dry. Soda cleans the plumage, but it sometime injures it.

Prize Game Bantams at Birmingham (*J. A.*).—We do not know.

Making a Dorking Cock's Comb Erect—Indian Corn (*P. H.*).—If you fasten the comb with silver wire in the position you wish it to retain, it will do so, especially as the bird is young. American corn or meal makes birds very fat, but the fat does not stand against cooking, and the lean is both hard and bad-flavoured.

Age of Birds in a Class for Cock and Two Hens (*Idem*).—You can show any ages you please, and different ages in the same pen, in a class which simply offers a prize for the best cock and two hens shown. The words signify only sex, and have nothing to do with age. We do not think you will find customers for your Poules de la Heche at a very high price. They are little known in England. The best plan is to advertise them in our columns.

Points in Silver-spangled Hamburgh Cock (*H. C.*).—White deaf-ears and spangled breast are both essential in the formation of a Silver-spangled Hamburgh cock. No amount of merit in one will outweigh or atone for the absence of the other. Yet if we had to choose absolutely between two, and the ear-lobe of the bird with the good breast was only faulty, not absolutely red, we would take it in preference to the black breast. It is essential in the Golden-spangled that the hackle and saddle be clouded, but it is not the case with Silvers.

Rabbit Selling (*J. D.*).—The case you state is clearly within the jurisdiction of a County Court. You must sue the purchaser in the Court of the county in which he resides.

LONDON MARKETS.—December 16.

POULTRY.

There is but a sorry trade, and we do not anticipate any alteration till we come into the Christmas market.

Each—	s.	d.		s.	d.	Each—	s.	d.		s.	d.
Turkeys	7	0	to	12	0	Grouse	1	9	to	2	0
Large Fowls	3	0	,,	3	6	Partridges	1	6	,,	1	9
Smaller Fowls	2	0	,,	2	6	Pigeons	0	8	,,	0	9
Chickens	[illegible]	[illegible]	,,	[illegible]	9	Hares	2	0	,,	2	6
Ducks	[illegible]	[illegible]	,,	[illegible]	3	Rabbits	1	3	,,	1	4
Geese	[illegible]	[illegible]	,,	[illegible]	[illegible]	[illegible]	0	8	,,	0	9
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]						

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	DECEMBER 24—30, 1861.	Weather near London in 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
24	Tu	Epidendra.	29.425—29.403	32—4	N.	—	8 af 8	52 af 3	morn.	☾	0 3	358
25	W	Christmas-day.	29.439—29.267	31—19	N.	—	8 8	53 3	32 0	23	bef. 27	359
26	Th	St. Stephen.	29 526—29.450	32—17	N.E.	—	8 8	54 3	54 1	24	0 56	360
27	F	St. John the Evangelist.	29.509—29.491	34—24	S.E.	—	8 8	55 3	16 3	25	1 26	361
28	S	Innocents.	30.192—29.784	36—1	N.E.	—	9 8	55 3	40 4	26	1 56	362
29	Sun	1 Sunday after Christmas.	30.316—29.925	36—26	S.E.	.62	9 8	56 3	1 6	27	2 25	363
30	M	Bignonia venusta.	29.504—29.346	44—32	S.	.18	9 8	57 3	8 7	28	2 54	364

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 43.3° and 31.2° respectively. The greatest heat, 56°, occurred on the 28th in 1855; and the lowest cold, 8°, on the 28th in 1853. During the period 141 days were fine, and on 97 rain fell.

GENEALOGY OF VARIOUS GERANIUMS.

WRITING in a hurry, I made a marvellous mistake last week, at page 237, where it is said, "We are not aware of any hybrid Geranium being now in cultivation. *They are all cross-bred plants, the offspring of one original kind.*" They are nothing of the kind. It is quite true they are all cross-bred plants and not hybrids; but as I have not yet given my own opinion on Mr. Darwin's theory of the origin of species, my saying our bedding and show Geraniums "are the offspring of one original kind" is wrong altogether, and at the very opposite of what my practice would point to. All the Ivy-leafs are, undoubtedly, the offspring of one kind. All the Scarlets are, without doubt, the offspring of one kind also; but whether that kind was a plain-leaved one like Tom Thumb, or had the horseshoe mark, there is no evidence to prove either way. The Geraniums of the florists, in my early days, were the offspring of half-a-dozen kinds, but since then they have been brought down to the breed of Cuculatum alone. The bedding Geraniums of the greenhouse class, as Lady Mary Fox, Unique, Sidonia, Ignescens, Touchstone, and all the rest of them, are all hybrids, or the immediate offspring of hybrids—that is, from the union of two distinct members of the Geranium family. And it was from the early union of such distinct kinds that the botanists of the last generation took up their wrong ideas on muling or muled plants. All that you can find in all the writings of all botanists about muling is altogether wrong, and I question very much if there is such a thing on the face of the whole earth as a mule plant.

But let us go straight according to the heads laid down. The first was the Ivy-leaf. No other kind ever crossed with them, and few as their number is, there are more botanical mules among them than are to be found in any other section. A botanist will tell you a mule is a barren cross between two distinct kinds or species, and he will give you a reason why it is a mule, after such a fashion as this: That the parents stood in such and such relationship to each other. But in those days the practice of cross-breeding did not begin at all, the whole thing was confined to hybridising. But so soon as cross-breeding began, it spread like wildfire, and the results from it soon proved that some of the deductions of the hybridisers were altogether untenable.

Muling was one of these deductions, or hypotheses, and is untenable also, for the cross-breeder will give you twenty mules and fifteen seedlings which are not mules, from one pod of seed which was fertilised by the pollen of the same flower: thousands can do it. Then, if a thousand cross-breeders can but produce each by his art one mule from one plant only, can you suppose such a thing as that Nature herself would require two kinds of plants to enable her to originate a mule plant between them? If you can believe such a doctrine, stick to your text, for it would be as a thousand cross-grains to one to disturb so harmless an idea.

The next are the Scarlets. Are they all really from one kind? I think they are, for this reason, that the plain-leaf and the horseshoe-leaf are convertible the one for the other at every change in the pollen. Botanically I may be wrong, and the horseshoe may have branched off from the "Cape Scarlet," ages before the Cape was known on this side of the line. Both the originals are lost, but a cross-breeder could reproduce them in one season. The Golden Chain is an immediate sport from the "Cape Scarlet," of my boyish days, the *inquinans* of botany, and true seedlings of the sport will furnish the type plant among them certainly.

The original Horseshoe Geranium from the Cape was a true Nosegay, according to Miller who first described it popularly in English. In his time "it was the oldest and the most common sort in the English gardens," and attained to one-half only of the size and stature of the plain-leaved Cape Scarlet. According to him the flowers were "of *a purplish-red colour*." I put the italics because many people believe the original horseshoe-leaved kind had the same tint of scarlet as the inquinans, and being not of the same colour as the original plain-leaved Scarlet fortifies my belief in its being only a wild sport. The tints of all the sports of Geraniums are different from those or that in the parent flower.

The next sport from the same plant was under cultivation, and it was the Golden Chain, the style of flower much the same as in the first sport, the Horseshoe, but the leaf and stature widely different, yet in one sense a real Horseshoe after all. Then we know very well that the first horseshoe-leaved Geranium was not a "fixed" kind as late as Miller's time—that is, not a true botanical species, for it would not then come true from seed, or, at all events, the seedlings would not be all like the parent, as they ought to have been if the parent had been a true wild species. Miller distinctly says there were four varieties from it under cultivation round London in his day, "one with fine variegated leaves, one with crimson, and another with pink-coloured flowers which have been accidentally raised from seeds," the fourth being nearest the original. Now, do you know of any really botanical species which would not come true from seeds the moment it was in cultivation? I never knew of any such species: therefore, I believe the Horseshoe Geranium was never a species at all, but a sport; and, therefore, also, I say and maintain that all the Scarlet Geraniums which are now in cultivation are referable to one original kind. And when a man tells me he had been hybridising his Scarlet Geraniums, I know very well that he could not have been doing any such thing—that he was merely cross-breeding the seedlings of one kind, as I believe them to be, and as I have attempted to trace and describe them. There was a large bed of the original Variegated Geranium mentioned by Miller, as a seedling sport from the first Horseshoe Geranium on the Rose Mount at the Crystal Palace last summer. Seedlings from that variegated sport will give, among others, the identical first kind of Horseshoe on record, just as the Golden Chain will reproduce the original Cape Scarlet, or inquinans, such as Linnæus described them in his "Hortus Upsalensis."

Then, it is evident that we improve the different sections or races of the family of Geraniums by a process the reverse of that by which the breeds of horses, sheep, and cattle are improved—that is to say, by breeding in-and-in, or cross-breeding, which is entirely and altogether different in its effects from that of hybridising; and if we would attend to these practical differences, as between cross-breeding and hybridising, it would greatly tend to simplify our meaning, and to instruct our readers in the practical application of the same process. But it would not be to simplify our meaning just yet awhile to give a true definition to another turn of the process of applying the pollen—I mean when we cross a distinct wild species by one, or with the pollen of one, of our cross-bred seedlings. Thus, when I said "if the green parent of Mangles' Variegated Geranium would cross with Tom Thumb, or with any other bedding Geranium, the seedlings would be hybrids," I was not strictly within the law. Tom Thumb is not a true species like the other, but a cross-bred plant: therefore, the seedlings between it and the green of Mangles', which is a genuine wild kind, would only be half hybrids; but it is hardly worth while to introduce so strict a definition of our practice. Mr. Banks' seedling Fuchsias are all cross-bred plants, not hybrids. When one of them is crossed with Fuchsia serratifolia, a wildling, the seedlings, strictly speaking, would neither be hybrids nor cross-bred plants—only half hybrids. But that fine, large, winter-flowering Fuchsia from the Messrs. Veitch, called Dominiana, is a true hybrid, because it was got by crossing two distinct wild kinds of Fuchsia. So we are not left to the fickle fancy that breeding in-and-in can alone improve our seedlings.

Hybridising is the only means given to us by Nature to obtain new races of plants, and by cross-breeding alone can we still further improve all new races. When Nature gives us more than one race in a family, as in these Geraniums and Fuchsias, and we despise them all but one, as florists do in Pelargoniums, and in turned-in-floret kinds of Chrysanthemums, we do not respond to the kindness of Nature for the gratification of our senses. Barring this clause, I would be a florist, and always was, and I hope to continue to be so to the end of the chapter. But the care and kindness of Heaven in supplying us with so many sources of innocent enjoyment I should be the last on earth to ignore in one single instance: therefore, I have very great pleasure in telling you a tale.

I have just made out one other new kind of Miller's old sporting Horseshoe Geranium. He said that kind sported from seeds, and from a "reddish-purple" flower turned to a "crimson flower," and to a "pink flower." Now, did you ever see a real pink Geranium of the Scarlet breed? I never did or heard of such a thing but in Miller's. When I had to pay the strictest attention to all the distinct colours and shades of colours for the flower-beds under authority, there was no pink Geranium such as Miller speaks of, save the little, close-growing, pink, Ivy-leaved Geranium; not another like it, or in the likeness of a true pink colour could be had among all the Geraniums. All their pinks were tinged with rose or with cherry colour. Miller was too good a judge, and too practical a gardener to call cerise a pink, or a Lucia rosea the same; but he says a pink Garanium of the Horseshoe class was common in his days—that is, say one hundred years back, and I told you already the influence I had over the stamens, but never said a word about the ways I exerted that influence from 1853 to last season, in endeavouring to hunt out from the horns of the pistil this same pink of Miller's, or one in the same degree as he would call pink. I found it, and I shall leave it as a legacy to the ladies.

By another mixture of the same strain, and with an utter abhorrence at the apocryphal doctrine of superfœtation, I found at the same time a real true and pure magenta colour, the very finest tint we have in all the race. I do not yet know what names these will bear, or how they will be sold, but they are in the hands of my agents. My present mark, however, is on what Mr. Smith has done and lost between the Golden Chain and Mangles' Variegated Geranium with the shorter stamens. I think I offered 5*s.* in these pages to any one for one seed of Mangles' some years since; at all events the offer was on my tongue for two or three years after I left Shrubland Park, where I once had a chance truss of seeds on Mangles' with five or six seed-pods, so [illegible] and every one in the garden was cautioned not to [illegible] was the [illegible] way to make away [illegible] itch to be at it. Sure enough some one cut it off ere it was half ripe, and I never saw a man so near cutting off his own head as Mr. Wells was well nigh doing when he, then foreman of the department, found it was gone.

Then about the 5*s.* A lady once took me at my word—the lady of Capt. Whitty, now inspector of prisons in Dublin—the lady who manages the Waltonian Case so well that Mr. Fish must have called on her on purpose for a leaf out of her book. Mrs. Capt. Whitty assured me she had often seeded Mangles' Variegated, and would do so for me that season, and she was as good as a man to her word. She ripened two seeds that summer (10*s.* hard cash), but I was ungallant enough to resolve not to pay till I found the seeds had sprouted, which they never did; but whether that was to save my money or my credit as a gardener, I leave you to judge, and shall go any lengths to persuade other people to try the effects of the shorter stamens of my new pink Geranium and my real magenta on a two or three-year-old plant of Mangles', for Mangles' and the green type whence it came are true pinks so far, only pale pinks, yet free from the slightest tinge of rose or cherry colour. Then, if they, or any one of them, succeed in seedlings, we shall possess materials for a new section of pink, real pink Geraniums; and when we plant equal quantities of pink, purple, crimson, scarlet, and yellow, and learn to put the colours in the right positions, our flower gardens will be something more than a blaze of scarlet and yellow.

D. Beaton.

VISITS TO SOME OF THE FRENCH NURSERIES.

(*Continued from page* 213.)

Monsieur Margottin, Bourg la Reine, near Paris.

The name of this most successful Rose grower is well and honourably known in England as the raiser from time to time of some of our most sterling Roses. Louise Odier, Jules Margottin, and Belle de Bourg-la-Reine are sufficient to stamp the character of any one who has been fortunate enough to introduce them to the public as a man of note, and one whose opinion on the merits of the flower which forms his *spécialité* is well worth considering. All the anticipations I had formed concerning him were thoroughly borne out; and I have little hesitation in regarding him as the most thoroughly practical Rose grower I met with in France, and also as an upright and honest man. Of this I feel perfectly convinced—that however he may be mistaken, as must unavoidably be the case with everybody at times, he will never send out a Rose which he believes to be below par; and he, more than any Rose grower I met with in France, seemed to appreciate shape and constitution as so very desirable. A notice, then, of his nursery I cannot but hope may be interesting to those who, like myself, loyally regard the Rose as the queen of flowers.

On the short line of railroad which runs from Paris to Sceaux there lies the suburban village of Bourg la Reine, and in the main street of the village Monsieur Margottin resides. His nursery runs at the back between the street and the railway, and is in a more cool and sheltered position than most of the nurseries about Paris. The soil being, moreover, that unctuous loam so dear to Rose growers, and not unlike the Hertfordshire Rose grounds; and as it is almost entirely devoted to the Rose, and especially to the raising of seedlings, it could not but be that great interest would attach itself in my eyes to such a spot. At that late season (Oct 10th) it was not, of course, to be expected that we should see much in bloom; but we did see in every part of the ground grafted, budded, and on its own roots, La Boule d'Or, opening most freely, and one of the yellowest and most beautiful of Tea Roses it is. I have strong hopes, therefore, that notwithstanding the disappointment it has occasioned this season it may by-and-by, even on our side of the Channel, prove a desirable Rose. In colour we have nothing at all approaching it save Persian Yellow.

Of the new Roses of last season, he spoke very highly of Madame Furtado, which I fear, however, will prove to be but an indifferent grower; also of Catherine Guillot (Bourbon), which for shape is not to be surpassed. Reine des Violettes, too, he pronounced good; but then I think those slaty colours are much more according to French than to English taste. General Washington he also considered a valuable Rose, as I have no doubt we shall find it.

The [illegible] seedlings of this year were in bloom and promise well. Souvenir de Comte Cavour, H.P., is very dark, rich deep velvety crimson, shaded with black; the petals of great firmness, and the flower tolerably full. Alexandre Dumas, H.P., is nearly black, and also seems as if it would be a very desirable Rose; while in Comtesse d'Ouvaroff we have a strong-growing and erect-flowering Souvenir d'un Ami, and therefore likely to be a great acquisition.

That Monsieur Margottin exercises a wise discretion in the sending out of his Roses may be gathered from the fact that he grows upwards of 30,000 seedlings, and from these has only selected these three. Of seedling growing he gave me some interesting particulars—thus. He says he had one year from Louise Odier about twenty varieties of every colour from white to nearly black; and that, although they looked very promising, not one of them when grafted was worth anything, and were all thrown away. Then, again, he stated that seedlings, if they flowered either the first or second year, were generally failures. Their constitution was so bad that they died off the third year, and several gaps were shown to us where such had been the case; while a seedling that does not flower until the fifth or sixth year was generally likely to be good, it being generally the case that those which flowered little and grew well as seedlings would, when grafted or budded, flower better.

The season of last year, which proved so fatal to us, was well nigh as damaging near Paris; and Monsieur Margottin showed us that not one of the seeds which he sowed last year had made its appearance, and this although apparently it looked well—thus manifesting that there was the same want of vitality there as here. Again, on the subject of the Moss Rose, about which so many pretty conceits have been by poets invented, and sung by lovesick youths and maidens. He stated that although he only saved seed from Hybrid Perpetual Roses and had no Moss Roses in his garden, that yet out of every ten or twelve thousand seedlings he was pretty sure to get one or two Moss Roses, and he had then one Perpetual Moss of which he hoped good things. There were some seedlings, too, from Louise Odier, which promised to be of some note, and they will be probably introduced to the notice of the public next year. Rose exhibitions are not much patronised in France, the greatest interest being taken in seedlings, which as a matter of course pay better, and hence the general stock of Roses is not as large as one might expect.

I cannot but think that the commercial point of view is the one from which the value and importance of the Rose is most regarded by our French friends. Here will be, perhaps, the proper place to say that, feeling this, I was extremely desirous of trying to induce the French growers to come over here with their seedlings next year, when everybody will be on the wing to the Great Exhibition. I mentioned it to several friends; and my plan was, that twenty of us who were interested in the growth of the Rose should subscribe a guinea each, and offer it in three or four prizes to the best six blooms of any one Rose which was not as yet for sale. I put myself into communication with the Council of the Royal Horticultural Society in order to see if they would sanction its being part of their plans (as Mr. Wentworth Dilke's prize was), for the ensuing year, feeling that that body was best known in France. The offer was accepted; but as I was only given one week to complete the arrangements, which would have been quite inadequate, I was compelled to give it up. I cannot but think the scheme practicable. London is reached from Paris in ten hours and a half; so that Roses cut the night before might very well be at Kensington Gore by eleven o'clock, and by giving additional liberty to such exhibitors, would be in abundance of time.

The same kind and genial hospitality which we experienced at other places was shown to us by Monsieur Margottin, who has some good knowledge of England, as his son was for some time at Mr. Paul's, of Cheshunt. A more complete knowledge of Rose-growing it would be almost impossible to meet with than he possesses, and, as I have said, although he may be sometimes mistaken, I should be quite ready to take his opinion on all matters connected with the radiant queen of flowers. He grows the Hollyhock too, which he told us was another Rose, and is indeed so called by the French—Rose tremièrene, or Passe Rose! and of these he had some of the best English and Scotch varieties. He had also some Camellias and other flowers, but the Rose was his chief concern: and I can only express my hope that he may long give it his attention, and gladden the eyes of our English rosarians with some worthy compeers of Jules Margottin & Co.—*D.*, *Deal.*

CUTTING DOWN CLIMBING ROSES.

In your Number of December 10th, I find in your answer to "B. B.," you recommend that climbing Roses should be cut down to within a foot of the ground the first season, and for other two seasons also. My house is a very high one (five storeys), on the edge of the west cliff of Whitby, and immediately facing the German Ocean, from whence we have most severe gales of wind. The front of the house is exactly east; there is an area 8 feet deep, or below the ground, and 6 feet wide. The sun only reaches the bottom of the area in summer for an hour about 10 o'clock in the morning. To grow up the front from out of this area I have planted two Rose trees, one of which has now grown 10 feet high, the other is still only about 2 feet, the same as when it came. I want to know if I have understood your meaning right, and that I must cut down my beautiful trained tree, if it is too late, and would spring do? I should also feel obliged if you would give me the names of some other sorts of climbers that would look well and flower in July, August, or September, and be very hardy.—S. B.

[Under the circumstances you ought to cut down both your climbing Roses to the very surface of the ground next March, and the more you cut them the next March and the third March the sooner they will cover the wall, although that sounds odd. But if your climbers were Cloth of Gold or Isabella Gray, or any other Rose as shy of blooming as they are, they should not be pruned at all till they were so exhausted as to bloom freely. All climbers soon exhaust themselves if they are not pruned, and the free bloomers will soon cease to be so if they once become exhausted. The parts next the ground get so hidebound that nothing will save or refresh them but a cutting down to the last joint, and better do that first than last. The next best climbers for you are Clematis Hendersoni, and Viticella flammula, and the common Traveller's Joy, Clematis vitalba.]

THE IN-DOOR PLANT CASE.—No. 5.

(*Continued from page* 200.)

GREENHOUSE FLOWERS.

I have now to describe the most suitable arrangement for a case to be filled entirely with greenhouse plants—in summer, of course, for these no heat is required. In winter, however, those that have had most forcing, and even hardy plants forced into early blossom, do best at the warmer end.

In filling a greenhouse-case the first thing to consider is which plants to place the nearest to the light, and which will bear to touch the glass without injury. Very juicy crisp sort of leaves in general, like Primroses and Geraniums, suffer very much from the slightest contact. Thicker and more leathery-textured evergreens will, however, be quite uninjured; and these may, therefore, be placed at either end.

I find Myrtles amongst the very best and pleasantest plants for giving this dark foliage; but then I am fond of growing plants from which one may sometimes gather sprays of green leaves and flowers, and Myrtles seem quite wonderfully to submit to such pruning. A good arrangement is to place a large Myrtle in each corner, and then to let a Camellia spread itself out in front of it.

The large-leaved flowering Myrtle is one of the nicest; but the small-leaved kind is still prettier for cutting, and it looks very charming when not allowed to have too long a stem. Myrtle cuttings strike more easily in these cases in a little sand than in any way that I know. The old plants require a great deal of water; and this deserves attention, since if it be not given they are apt to lose their leaves. In the glass cases dust accumulates with exceeding slowness; but even thus it is well every now and then to refresh the foliage of these thick-leaved plants by washing or sponging. The simple cottage plan of standing the plants outside during a soft mild shower is very beneficial; but in London the rain is not always purifying, and it is always necessary to guard against worms ascending into the pots through the drainage-hole, as they tear the roots and inflict much injury. I have known great masses of roots completely separated from the plant by this very thing. Camellias are most useful plants, because they have such beautiful and such massive flowers. They may also after flowering be stood out so safely under a wall, or even on a house-roof, so that only the pots are sheltered or placed in others. Draining the outside pots with finely pounded ashes is a good means of preventing the entrance of any worms when the plants stand on the ground.

In the glass cases my own mode is never to water Camellias at all. They are very awkward things to water—too much or too little mostly causing the buds to fall; and thus I use the flower-pot as a kind of filter, and content myself almost entirely during the time of flowering with watering the sand that surrounds the flower-pots. This, however, has to be kept pretty moist.

The old double white Camellias have never, I think, been surpassed in beauty, nor in ease of culture and freedom of bloom. Fimbriata alba is also a lovely sort.

Crimson and pink Camellias are also most attractive; and for cases I have sometimes had little plants not more than a foot high, which look extremely pretty.

The Camellias greatly enjoy having their leaves kept clean; but I confess to avoiding sponging while the buds are swelling, as on one occasion some years ago all the buds fell off after such a process. I do not know what caused it, but I had a theory at the time that it might have been caused by over-rapid and violent absorption of the moisture.

The Myrtles being arranged at the ends and corners, and duly faced with Camellias, Azaleas will answer most delightfully in the centre, blossoming for an extraordinary length of time and preserving their foliage in a thorough state of freshness. I think the old Indica alba, the White Perfection (which is a special beauty), Etoile de Gand and the Bride are amongst the very best of the white Azaleas. The latter, however, I do not think I have ever kept in a plant-case, though it will doubtless answer there as well as any sort.

Rosy Circle and Model are beautiful pink flowers spotted with scarlet rose colour. Variegata is a beautiful salmon rose edged or streaked with white; and Exquisita is violet pink and white, lovely as its name implies, but not so good as pure white or rose for candle-light.

I generally find the Azaleas do best with a little water daily, or moistened sand surrounding them keeps them very safe. These plants trained down flatly look very well spreading out in the plant-cases below the Camellias, one at least at each end. Those most out should be kept at the coolest side.

Gardenias and Lilies of the Valley should always be coming on, the latter at least from November till April. They do at first with but little light: latterly they require to stand near the window, that they may not grow up too tall.

I do not find Violets answer so well as most things. Perhaps that is, however, because I have been used to such quantities out of doors almost all the year, that I have never till lately tried to grow them much in rooms or in plant-cases.

Roses also seem to require a special treatment, involving a good deal of air when attainable. I fancy that a plant-case kept very light, and filled entirely with Roses, Mignonette, and Violets, would answer very well with sand kept a little moist, the front panel out, and hot water given only in the morning; the front panel being closed, or a woollen cloth hung over on a real cold night.

The Chinese Primroses, again, are amongst the most useful flowers. In these greenhouse groups they go on flowering with the utmost luxuriance and beauty. Leaves and flowers both look fresh and beautiful, and they continue for months opening out their large white or lilac [illegible] fringed [illegible] [illegible] the

cooler, the beautiful double ones at the warmer end. Mine do admirably under the shade of the Camellias. These plants require rather more water than many others; but they should not have much; and if they never get really dry, moist sand outside generally keeps them safe. Almost any plant, if it does accidentally get too dry, requires a good watering as the roots make a tight ball in the middle through which when once hard and dry water can scarcely penetrate without soaking. I own, however, to preferring, when plants are in blossom, beginning this soaking by means of wet sand, to prevent the too sudden change from a starved condition.

Half the secret of forcing flowers in winter in these cases, as in every other structure, lies in giving them always water that is above the temperature of the soil and atmosphere. The other half, I fancy, chiefly consists in how much light they get.

Sweetbriars are well worthy of a winter place in the greenhouse case. They do best at the warmest end, and do not require a very great deal of light. The lower and dwarfer these plants are the better, as we only want their delicious scent.

A Heath or Epacris, a Deutzia or an Orange tree, should be in the centre. Heaths especially like to have air all round them.

The E. hymenalis is a most useful one for these cases; and also the little round white-flowered one, the name of which I cannot just now remember.

With these Myrtles, Camellias, Azaleas, Primroses, and Heaths for the larger and more conspicuous plants, Sweetbriars, Lilies of the Valley, Ferns and Lycopodiums (the latter chiefly for lining the glass at the side next the room farthest from the bright light and for undergrowth), a most exquisite display of blooming plants may be kept up all winter. They last indeed so long, that I am really tired of having for a third week to report the same white Camellia blossom still fresh, as spotless as when it first came out, and showing every sign of lasting a fourth Tuesday! I have generally gathered my Camellias after about the first three or four days, so this is almost my first experiment as to how long they do last.

I must not omit to say, that though it is a greenhouse group that I now am speaking of, a beautiful Dracæna terminalis would answer well and form a charming centre.

The stillness of the air, which yet is in continual circulation, probably tends to equalise the wants of various plants.

Two inches of the top pane open, sand kept rather moist, a moderate-sized water-can of hot water night and morning, and a daily glance to see and remove any fading flowers or decaying leaves, is all the attention that such a case requires, even at this season.

HEATING A GREENHOUSE AND STOVE.

I HAVE had a greenhouse and stove constructed according to Mr. Beeton's plan of a portable greenhouse in your Vol. XXI. The building is span-roofed, and adjoins the east end of my house, partly only, for an angle in the wall makes the remainder about 3 feet distant, and in this space I have placed a boiler, a common cylinder with egg-shaped ends, about 30 inches by 12 inches or 14 inches. Being afraid of the expense of getting men from Dublin or London, a local tradesman put up the hot-water pipes; and though his workmanship is good, yet I am afraid he did not sufficiently understand the principle of heating to give me that command over the heat that I required. I want to be sure of 55° in the stove, and 40° in the greenhouse, in the coldest nights. I have managed pretty well so far, but during the frost we had three weeks ago the thermometer went down to 52° and 35°, so I dread the commencement of any such frost as we had last December. To be ready for such an emergency, I have since placed a slow-combustion stove in the greenhouse, with a pipe out of the roof but I do not like the trouble and dirt of two fi[illegible] [illegible] this means to manage for the present. Through having three separate connections with the boiler, and being on so many different levels, the pipes do not heat evenly. The three-inch pipe is only used during frost, and, perhaps, from being the longest, it robs the others, though on the lowest level of the whole. I might run a second row over it, but then I fear I should not have heat enough in the stove. Could I gain more heat in the latter by carrying the boiler-flue through it, though this would be difficult, as the pipes at present run? Another suggestion made to me, is to place a sheet-iron upright cylinder, 4 feet by 14 inches, in connection with the pipes in the stove at the end of the path near the boiler, and that this will hold a large body of warm water, and radiate a great amount of heat without soon cooling.—AN ANXIOUS AMATEUR.

[Such a boiler, for anything we can see, ought to heat such a house; but yet we cannot see the way clearly how to help you, as we do not know how you have formed your three separate connections with the boiler, nor the relative height of the different pipes in the different places. A cross section showing how much the boiler was below the ground level, and how much the other pipes were above or below it, would have enabled us to see where the error lay, if error there be. As it is at present, we can safely say that for such a span-roofed stove you have not a bit more piping than you ought to have in the stove, and not enough if the temperature requires to be kept high in severe weather. Running the flue, therefore, through the bed and back again, would no doubt be an advantage. For the greenhouse you would have required two four-inch pipes all round. In severe weather you will need the stove before this can be done. It would appear that this house heats best, apt to rob the others, and yet was so low; and yet if the pipes are here the lowest, we should expect that the heating power was also the lowest. We get also confused about the flow-pipe on the one side of the stove being a combination of the return-pipe on the other side of the stove, and not a word is said of open cisterns or air-pipes at any of these bends. It is just possible that a few air-pipes would remedy what you find wrong. If we saw our way clearly we would be most glad to oblige you; but it may so happen that everything is right except the quantity of piping. Even the pipes in the pit we know nothing of as to their position. We may just add, that the reservoir of water will, of course, add to the amount of heat, and that it would be as well to place open rubble over the pipes before adding a foot or 15 inches of cocoa-nut fibre or tan, &c. We may just remind you, which, of course, from your reading you are conversant with, that the top of the boiler should be lower than any pipe; that in close pipes the water should rise in the flow to the extremity, and have an air-pipe there, and return gradually to the boiler; and that if the pipes were lower in one house than the other, and that house the farthest off, but the lowest pipe there still higher than the top of the boiler, then the best way would be to heat all from an open cistern, instead of taking each pipe directly from the boiler—that is, in such a small space as yours, and where no heat at all was wanted, in one and the largest house, except in frosty weather. Keeping in view your present arrangement, then, instead of the large reservoir, we would bring one flow-pipe from the boiler into a cistern at least 3 feet by 1½ foot, and 1½ foot deep, placed at the end of the stove, and three holes in it for pipes besides the flow-pipe from the boiler. A double T-piece fixed in the return would enable you to connect all the returns separately. Then take one flow ending in a ⊥-piece reversed, and you have the flow for both sides of the stove, and the return would go at once to the main return; another flow would go to the pipe inside the pit, the end of that also joining the return, with an air-pipe in the highest bend. The third flow would go along the stove and enter the greenhouse, and there the pipe could go round double, with the return connected with the farthest side, or the flow-pipe could go round, and the return come back underneath it and go on through the stove to the return at the bottom of the boiler. In this case, too, an air-pipe should be inserted in the highest part of the pipe. Each part could thus be heated separately, by moving a plug or a valve at the cistern; and if one pipe was apt to rob the others, the valves or plugs would only need a little regulation to cause the flow to proceed as wanted. The lower any of the pipes descend, provided none below the top of the boiler, the higher in proportion should this open cistern be. We may say, as guess work, that it should be 2 feet or 3 feet above the pipes in the stove, if the pipes in the greenhouse are some 18 inches lower. We hope, however, that more heating power, and the insertion of some small gas-pipes, as air-pipes, will be all that is wanted. The air-pipes should have the open ends several feet higher than the pipes, and higher than the open cistern.]

DESTROYING AN OLD ORCHARD—WHITE COROLLAED FUCHSIAS.

I HAVE an orchard of about three statute acres in extent. The trees are old: it is about fifty years since they were planted. They are of a bad kind, and very indifferent bearers; and having taken into consideration the expense of a man watching the orchard in summer and other trouble and expense connected with it, I had resolved to root the trees out, and turn the land to agricultural purposes, for which it is well adapted, when I saw a paragraph in your Journal stating that orchards would soon become very valuable, as the Manchester manufacturers had discovered that Apple juice was the best thing now known for fixing the colours in cotton fabrics. Will you let me have your opinion and advice on this subject?

And, to mix the *utile cum dulce*, will you also let me know what are the best of the white corolla Fuchsias, the best time for getting them, and could plants be forwarded by post?—A SUBSCRIBER.

[An old orchard must be tenanted by trees much more decrepid, and producers of much worse fruit than we have ever met with, except in the cider counties, before we should recommend it to be uprooted, and the plough driven over its surface. The probabilities are in favour of the opinion that the orchard is slightly productive, and the scanty produce indifferent, because the trees have been both neglected and ill-used. We should thin out the small branches; lime-wash the stems and main limbs; manure heavily and surface-stir the soil with the fork, and so treat the orchard for two following years. If it showed no improvement after such good care, then let the trees cumber the ground no longer. All animals ought to be excluded from it; no crop grown upon the soil; and no spade allowed to be used upon it.

It is true, very possibly, that Apple juice may be found to be a good mordaunt, or an aid in some way for dyeing the newly-discovered colours; but if it be so, the malic acid, on which the property probably depends, will soon be manufactured artificially. Scheele formed an acid very nearly like it, if not identical, by treating sugar with fuming nitric acid. The berries of the Mountain Ash and the common Houseleek contain a considerable quantity of malic acid, and we hope our textile manufacturers of Manchester will have recourse to all the sources we have pointed out, and leave our Apples alone, or be content with their parings.

Of white corollaed Fuchsias, Empress Eugenie, Mrs. Storey, Princess of Prussia, Queen Victoria, Countess of Burlington, and Eclat are good. Small plants may be had now by book post.]

BORDER BENEATH AN ARBOR VITÆ HEDGE.

ROSE FOR A CHALKY SOIL.

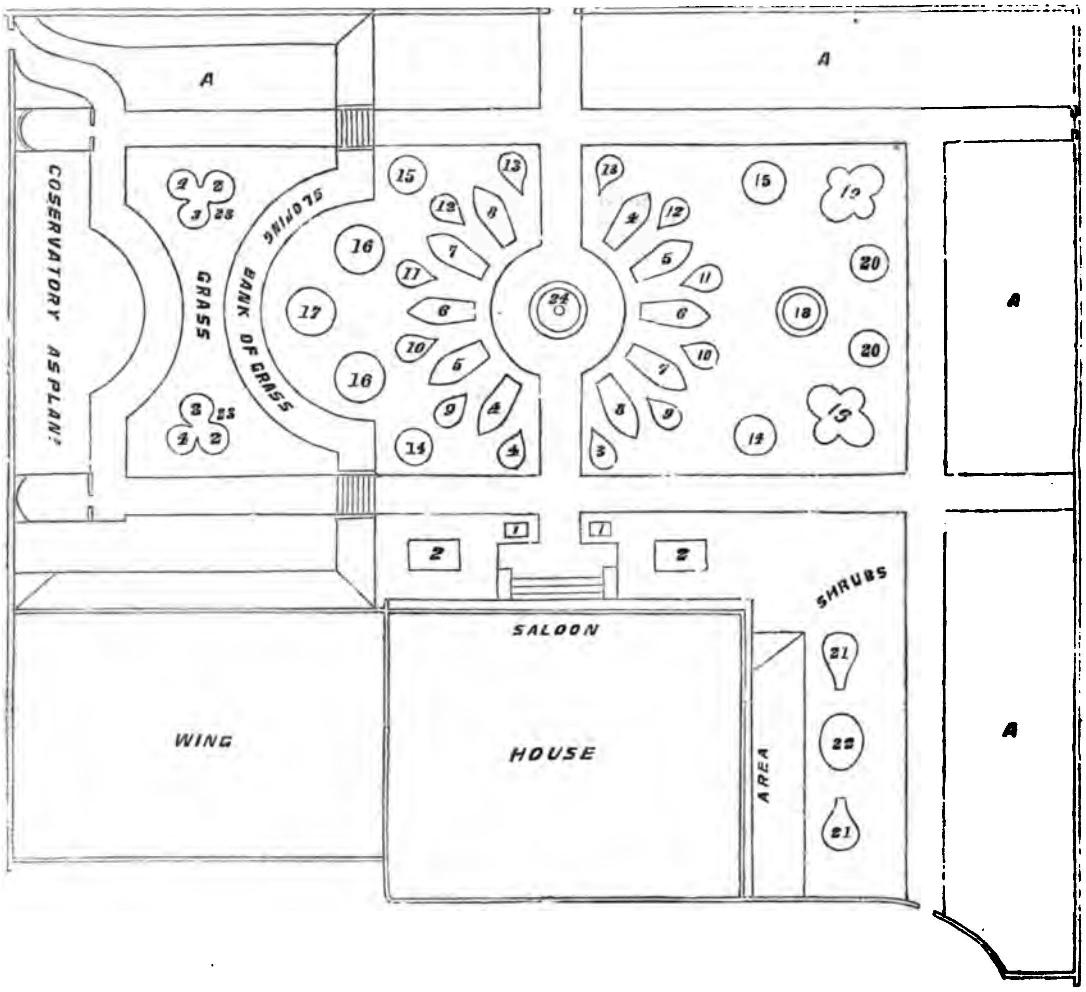
I HAVE a small lawn before my house about 80 square yards. On either side is a hedge of Arbor Vitæ, with a border of about three-quarters of a yard wide. Nothing will grow in this border owing to the roots of the Arbor Vitæ, and I do not know what to do with it. I have thought of doing away with the border by carrying on the turf under the hedge, and another idea has been to sow Mignonette over the whole border.—A SUBSCRIBER AT BATH.

[Turf over the narrow border under the Arbor Vitæs. Mignonette is the very last plant that would grow on a hungry surface, such as your border, sucked by vigorous plants of Arbor Vitæ, on a chalky soil, such as prevails around Bath. When Arbor Vitæs once get hold of a chalky soil they are so much at home that grass or turf over their roots seems to do them no harm whatever, while Roses on that kind of soil only die by inches, unless turf is put over their roots, and then they all go off by the yard measure, except Gloire de Rosamène; but without a chalky soil that Rose, the brightest of the whole race, is not worth looking at. Another of its peculiarities is, that it will not grow well on any kind of stock. While the great peculiarity of all Arbor Vitæs is, that turf does not hurt them if they are on a chalky bottom.]

A FEW DAYS IN IRELAND.—No. 8.

(*Continued from page* 216.)

LOUGH CREW.



A A A A, Low Shrubs on Grass.

This princely demesne of James Lennox William Naper, Esq., is situated in the midst of varied, picturesque scenery in the rich fertile county of Meath, thirty-seven miles from Drogheda, ten from Kells, and two from the town of Old Castle. We were induced to visit this charming place, partly that we might have the pleasure of meeting again our old friend Mr. Milroy, the talented gardener, and partly that we might satisfy ourselves from personal observation of the correctness of all that we had heard of the natural beauties of the place, enhanced by art and design, of the great improvements effected on the estate, and the comforts secured to the labouring population by the benevolent, noble-hearted proprietor, who along with his estimable lady, live almost constantly at Lough Crew, and have uniformly carried out in practice the great principle that "property has its duties as well as its rights." Need we be surprised that such a landlord should be more than respected—should be loved, and next to reverenced, when his presence must still remind so many that in the dark, gloomy days of famine, passed, we trust, never to return, the claims of right were pretty well forgotten in the anxieties and activities to meet the stern demands of duty? Need we wonder at the prevalence of this feeling of more than respect, when, after the dark days have passed, it is seen that the same untiring watchful, humane viligance is exercised still, that the happiness of his humble neighbours may be pr[illegible] [illegible] constant employment, [illegible] comfortable homes, and [illegible] able allotments—thus practically developing a great principle in social economics, that happiness worthy of the name can only be secured when it is based upon, and co-existent with, the comforts and the enjoyments of those by whom we are surrounded? Talk of the might of wealth, and we question not its power, though when not conjoined with felt responsibility it may be a power to blast rather than to bless—a power to repel rather than to attract; but ally it with the twin sisters of benevolence and beneficence, and how great is its elevating influence, how genial its sway! Hard and deeply debased must that heart be that the power of kindness will not soften and ameliorate.

It is sometimes unfortunate to hear a great deal in praise of a place before you see it. Even Niagara has failed to transport some visitors, because from being previously excited, it did not come up to what they had conceived. We were next to informed we could not pick a fault with Lough Crew, and that, perhaps, just set us on the look out for one, even when surrounded with so much to admire. Our readers must judge for themselves whether we succeeded, or if it is all a matter of imagination.

The position of the mansion is beautiful in the extreme, backed on the east or garden side by a rising glade of turf, and swelling out at the sides to high ground clothed with timber. On the west or entrance front, after a broad terrace of gravel and mown terraces of grass, there is a beautiful valley clothed [illegible] extending [illegible] to the kitchen garden, the best part of a mile distant, and far beyond, dotted and grouped with trees somewhat sparingly. On the south side of the valley the ground gradually rises and swells into mounds and hills covered with thriving, well-managed timber, the eye going onwards until it rests on Mullagh Meim and the ruins of Mullough Castle. On the north side after passing over the park, the eye rests on the mountain of Cairn Bawn some 900 feet in height, covered with timber, except bare promontories on the top, showing the bold and craggy rock, and thus throwing a dash of the romantic over the rich picturesque. Other fine mountains, as Stiene-na-Calliagh and Carrickbreak, are seen a little more distant. Now, from the garden front you see nothing but the grass in the park outside the balustrade, and some trees in the distance, and from the ground rising in every direction you can see nothing more. From these facts alone we come to the conclusion that the garden front and the entrance front should be reversed, and the one be substituted for the other.

These are matters for which most likely no one living is now to blame, if blame there is, and, therefore, we may obtain what instruction we can from this fine place without giving any offen whatever. That a clear judgment may be formed, we subjoin *fig.* 1, which represents a line drawn at something like 60 feet to the inch from the falling park at A on the west side, to the rising park at B on the east side, passing the grass, terraces, and slopes, the gravel terrace at entrance front, D, the mansion, C, the flower garden, E, and the rising park beyond. Suppose you stood on the east front of the mansion, or at any part of the line E, in the flower garden, you can see little beyond the garden if disposed to try, as the ground rises in a glade in the centre and swells to the north side and rises more abruptly and steeply on the south side, until the park loses itself in dense, beautiful woods. But just return to the west side and stand upon any part of the terrace at D, and either look down along the slopes and grass terraces, and the beautiful valley, or lift your eyes and allow them to sweep the grand panorama on each side of that valley, a cross line of which, *fig.* 3, gives no idea, and then say if you would not vote for that side of the mansion being made the garden front, and that the windows of the best rooms should have commanded that prospect.

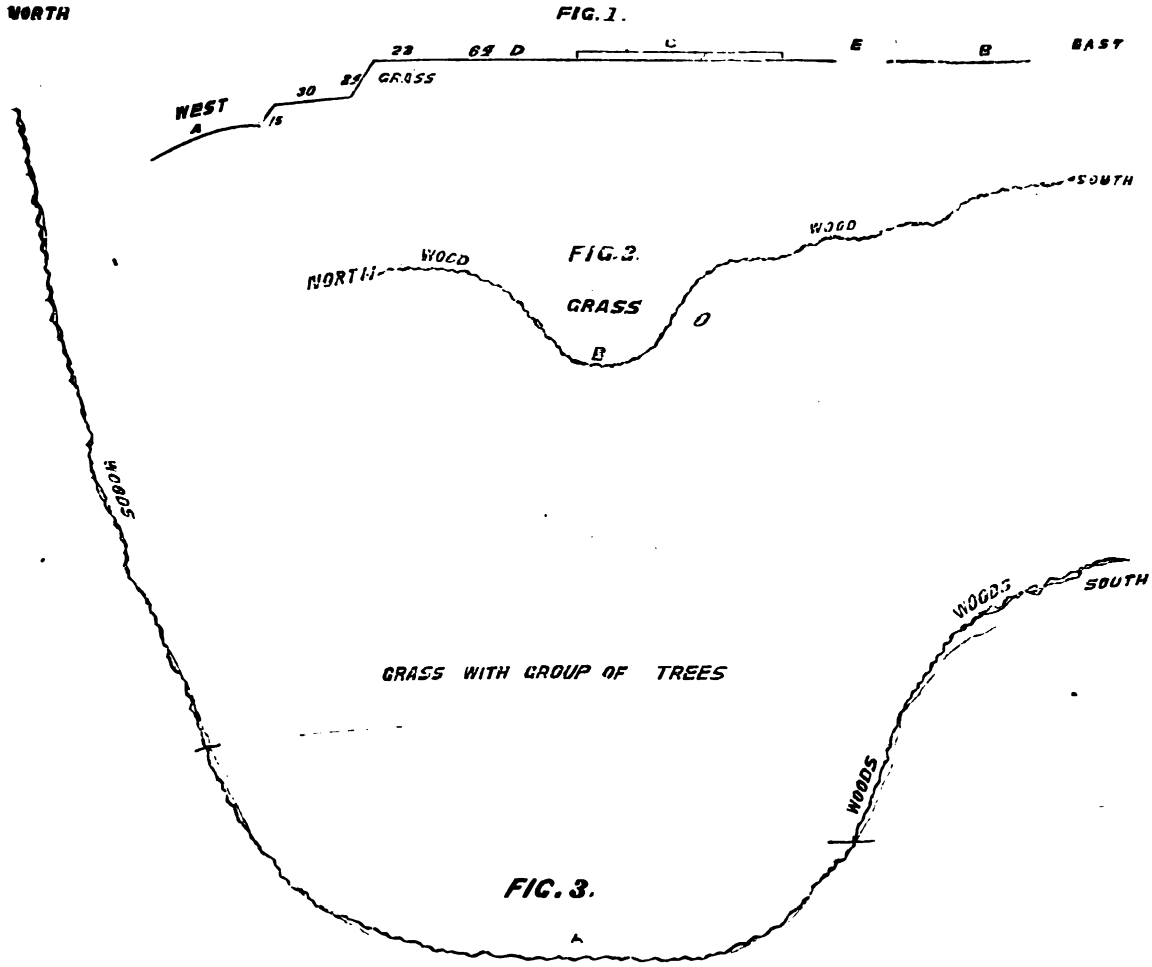


Fig. 1. Sectional line through terraces, mansion, and flower garden. The line in flower garden broken for room. Line in other places about 60 feet to the inch. Valley falls at A, and glade rises at B.

Fig. 2. Supposed cross line of ground on each side at B, showing that no view can be obtained there. At O would be the position for Araucarias, &c.

Fig. 3. Supposed line across and on each side of the valley from A, so as to give some idea of the expanded magnificent view.

From the plan of the flower garden (which see) an idea may be formed of the size of this fine Grecian building, built, as well as the offices, of hewn greyish limestone, but from there being only one wing, and the handsome and commodious stables and yards being clustered to the north and east of that wing, the mansion though massive in its appearance, is somewhat one-sided, and therefore at present so far unsatisfactory.

The terraces on the west side have been well laid out, and are beautifully kept. The width of these terraces and slopes is given on the sectional line. The length of the gravel is 232 feet, of the top verge of grass 264 feet, the first slope 300 feet, the level landing 348 feet, and the slope reaching the level of the park about 370 feet, nicely finished and levelled at the ends, and lengthening as they reach the valley.

Now, let us open the gate and get into the beautiful small flower garden, the very simplicity of the arrangements adding a charm to the superior management. For all that is said above, do not let it be supposed that we do not feel that such a shut-in garden has many advantages. To many calm, retiring spirits it would be more prized than the most splendid combination of terraces, and owners in all such matters will and should consult their own tastes. This garden breathes the very essence of comfort, repose, and tranquillity. Dazzling magnificence is quite another affair. One thing seemed to intimate that some arrangements were yet in abeyance. At the north end, close to a high wall already there, a site remains set out for a large conservatory, with a raised, sweeped-in, semicircular terrace of gravel and grass in front of it. A communication could be made easily between such a conservatory and the wing part of the mansion. From that conservatory and the terrace in front of it, as fine a view will be obtained of the garden as from the windows in the mansion. The only objection will be, that the conservatory and terrace at one end will form the chief points of interest, unless in the way of uniformity there is something of a similar character attempted at the other end. Taking these things into consideration, and keeping ulterior objects in view, we should clothe the wall at the north end of the terrace, devote the terrace itself to a distinct style of gardening, and build a span-roofed, architectural conservatory at the south end of the mansion, which would thus obtain light from all directions, except the north be a balance and counterpart to the north wing of the house, and interfere less with the unity of the present flower garden, whilst a communication could at once be formed between the drawing or dining-room (we forget which) and the conservatory.

The flower garden at present is bounded by a low balustrade, surmounted by a stout, elegant iron fence, separating it from the park. There is no attempt made to conceal the fence, nor is there reason for doing so; but between that fence and the walk there is a broad margin—say 25 feet of turf—and shrubs are so placed on the turf singly and in groups that they hide the fence in some places, and show it in others. There thus seems to be a conflict of aims which would not appear if the shrubs were thick enough to conceal the fence altogether, or thin enough to permit each to show itself separately. At present they form a good background to reflect the rich colouring of the flower-beds, and, to a certain extent, protect them from the east winds that must come sweeping down the incline of the park. Most of these shrubs, too, so far as we recollect, were flat-headed—as Laurels and Arbutus; whilst those of a more spiral character would have been more telling in contrast with the horizontal lines of the mansion. We could see that Mr. Milroy was dissatisfied with it, but did not glean how he would wish to alter it. Hardly anything is more difficult than to do such outside boundaries satisfactorily. Shelter, background, and contrast might be obtained by planting the shrubs in an irregular belt near the boundary, and then having a straight row all round of upright pyramidal trees on the grass, and far enough apart from each other—such as Cypress, Juniper, or the Irish Yew, grown not as bushes, but to a single stem, and allowed to feather out. If any alteration is made we should be glad to know what is determined on.

Talking of shelter reminds us that in this large place there is little of the exotic in woodland scenery—at least, we do not recollect much of that as a feature. Now a few spiral evergreens outside near the east boundary, and some small groups of the hardiest and showiest Pinuses in the foreground, and Deodaras, Araucarias, and Wellingtonias on the steeper banks on the south side, would alike yield to shelter, and prove a distinct feature and object of attraction.

The width of the garden on the south side is 235 feet. For the chief bulk, from that you must deduct the width of the mansion. The length from the boundary wall on the north to the balustrade on the south is 278 feet. The garden, nothwithstanding the winds and rains, was a perfect blaze of colour, each bed full to overflowing, and far less of foliage seen than we could have expected fter such rains. It was thus planted, beginning at the steps from the saloon. At first the beds being opposite, and then the [illegible] system of planting being adopted 1, 1, Golden Chain and Lobelia speciosa; 2, 2, Heliotrope edged with Scarlet Ivy-leaved Geranium; 3, 3, Blue Bonnet and Prince of Oude Verbenas; 4, 4, Punch and Tom Thumb Geraniums; 5, 5, Mrs. Lennox and Silver Queen Variegated Geranium; 6, 6, Rose Queen and Christine; 7, 7, Countess of Warwick and Flower of the Day Variegated Geraniums; 8, 8, Commander-in-Chief and Cerise Unique Geraniums; 9, 9, Aurea floribunda Calceolaria and Prince of Orange Calceolaria; 10, 10, Lord Raglan and Brillante de Vaise Verbenas; 11, 11, Alphonsine and Géant des Batailles Verbenas; 12, 12, Kayi and Viscosissima Calceolarias; 13, 13, Purple King and Ariosto Verbenas; 14, 14, Alma and Annie Variegated Geraniums, each bordered with blue Lobelia; 15, 15, Bridal Bouquet and Bijou, each bordered with Lobelia; 16, 16, Shrubland Rose and Smith's Superb Petunia, bordered by Variegated Alyssum; 17, Blue Salvia, strong plants of Lady Plymouth Geranium, and Perilla nankinensis; 18, Gazania splendens, edged with low border of Variegated Mint; 19, 19, dark Purple Zelinda Dahlia, bordered with rich wreath of Mangles' Variegated Geranium; 20, 20, Trentham Rose and Judy Cerise Geraniums; 21, 21, Imperial Crimson and Newlii Geraniums, two fine match beds; 22, Heliotrope just in front of a principal window; 23, 23, as terrace; 1, 1, Lobelia Roi Leopold; 2, Fairy Nymph and Attraction; 3, 3, Lady Dorothy Nevill and Lady of Loretto; 4, 4, Général Pelissier and Masterpiece.

It may be useful to mention a few facts respecting some of these plants, the results of observation and the statements freely given by Mr. Milroy. Newlii, a dwarf, crimson Nosegay Geranium, grew freely and bloomed most abundantly though the season was so wet. Imperial Crimson, two shades darker, does equally well. The two make fine match beds. Countess of Warwick is considered the best Variegated, a strong grower, a fine bloomer, and keeps the bright horseshoe mark almost as fine as Attraction in that respect, but vastly superior to it in habit and colour of flower. A match for it would be an acquisition. Bridal Bouquet, Alma, Annie, and others only do well in dry weather. Conway's Princess Alice and Emperor of the French are too strong growers for beds, but do admirably for pots. Trentham Rose, and what is called Judy Cerise, match well, Masterpiece, Richmond Gem, and Général Pelissier, ditto; Lady of Loretto, and Lady Dorothy Nevill, ditto; and Bijou and Mrs. Lennox, as Silver-edged. In Pinks, Christine, and Rose Queen, first-rate matches and a mass of bloom. All salmon colours are only fit for pots in that moist climate. I noticed also many others, as a strong-growing King of Scarlets, a bright scarlet, General Simpson, Mrs. Smith, resembling Rubens, and many others under a course of trial.

Leaving out of view the background given by the shrubs already referred to, the great charm of this garden consisted in the grouping of the beds round the fountain, the open space thus secured by water and gravel for repose, and the comparative thinness with which the beds are placed on each side. Had the whole space been covered with beds as thickly as those round the fountain, a vast number more plants would have been required, and the effect on the whole would have been anything but heightened. For these beds, and for the conservatory when it comes, even if everything else continues as it is, a preparatory establishment near at hand will be requisite. We presume that at present the plants are taken from the kitchen garden.

Outside, again, on the terrace of gravel we noticed how clean and nice it was. The approaches, too, as far as we saw them, had been very substantially made. We were little on any of them, except the one leading north-eastward in the direction of the farm. The gravel, after heavy rains, was smooth and firm, the curves very easy and graceful, the grass verges short and green; both sides planted with deciduous and evergreen trees; one side rising into swelling mounds, and the other side sinking into glades and glens. With all this there might have been monotony; but this is thoroughly avoided by the variety given to the width of the grass margins. Now a shrub comes within a couple of feet of the roadway; anon a bold sweep of lawn, from cutting out and thinning; again a lesser sweep, along which the eye passes as traversing a line of beauty; and thus from end to end there is a constant succession of change that cannot fail to be pleasing. There can be no mistake about it. The eye of the artist was necessary to form that roadway; the eye of an artist is just as perceptible and as necessary now to prevent the beauty becoming monotonous.

The dignity of the mansion is enhanced by the fact that the approaches *rise* to it. Standing on the gravel terrace you can see that on the south and the north sides winding up the hill.

There is not much to be said against this, farther than that the best road is no ornament in itself in extended park scenery. In an avenue leading straight to the entrance-door this cannot be avoided. Approaches entering on the gravel front at right angles should be seen as little as possible before they get there. This could be managed easily in the present case. On the north side especially the road comes near enough the sloping terraces for complete safety on a foggy night. A group of trees already exist, behind which the approach could wind as gracefully as now and enter at once on the terrace. So much for the terrace. I have dreamed, however, and that repeatedly, that the day will come, though I may not have the happiness to see it, when the improvements on the estate, and the comforts of the workpeople (now, as it is right they should be, matters of the first importance) shall be carried so nearly to a point of completion, that such a craving will be felt to find something fresh to do and to obtain an outlet for the increased rent-roll, that these fine approaches will be swept round to the new garden front. A splendid conservatory will adorn the south side of the mansion, and these wide terraces of gravel and grass, now somewhat meaningless, will be changed into one of the best examples of Italian artistic gardening; and then even Chatsworth and Shrubland will have to look after their laurels lest a rival should come from the Emerald Isle to contend for, and to win and wear the wreath of the conqueror. R. Fish.

(To be continued.)

PREVENTION OF THE POTATO DISEASE.

I am not surprised that Mr. Pownall should take exception at my remarks on his paper of the 3rd instant. In taking up the pen on a subject with which personally I was practically unacquainted, I laid myself open to attack. I beg to withdraw my charge of Mr. Pownall's rashly and publicly condemning the system. I still maintain that the printed directions are "plainly and lucidly expressed," and can bear but one meaning—viz., that the Potato haulms are covered entirely with earth. But, in conversation with Mr. Shortt, I discovered that this was not what he himself intended to convey. Mr. [illegible] wrote the letter in question, and he held the opinion that the whole haulm must be covered. Mr. Shortt, at the time, objected that such was not his view or practice; but the paper was not altered. Mr. Shortt's own practice is, as stated in the footnote added to my remarks, previously in the hands of the publisher.

This will tend to prove that both systems will answer in arresting the disease; but the total covering of the tops would, doubtless, put a stop to further growth in the tubers.

I still maintain that, take the printed directions as they stand, or modify them to suit Mr. Shortt's real intention, Mr. Pownall himself misapprehended their meaning; that to twist the tops, "hayrope fashion on the centre of the ridge, and then put the earth of the furrow over that," was totally at variance with both the spirit and letter of the text. Although the words, "If I understand it aright, the principle is," &c., were used by me, I did not in the least intend to imply that there was the slightest shadow of a doubt in my own mind as to the meaning of the written directions. Besides, Mr. Pownall will see that I used this expression in the footnote, after having been informed by Mr. Shortt of the error contained in the published letter. From a conversation of only a few minutes duration, I might not have felt so qualified to speak unreservedly as if a paper of written directions were lying before me.

I am not acquainted with the amount of crop obtained by Mr. Shortt, but understood it to have been a good one; but with regard to the amount of disease, it may truly be said that the exception proves the rule. Four tubers only were affected, and these were taken from the extreme end of a row, which were not perhaps so well protected by the earthy covering.

Although the system has not been personally tried by me, yet I have seen it carried out in my father's garden; and, as stated in my last, with satisfactory results. Perhaps a garden under my own care would not have afforded me a better opportunity of watching the experiment.—S. Bevan Fox.

TREE CARNATION THE BRIDE.

My employer purchased the Bride, with some others, twelve months ago. I have now two fine plants in flower. The flowers are pure white, and as large as the old Boule de Feu; very sweet scented, quite equal to the Clove. No person ought to be without it that grows Carnations. The way I manage after getting them from the nursery, if at all leggy, is to peg them down in the pot. In following that plan, I have grown them 3 feet through and the same in height by the second year; and they flower from October till February.—B.

FLUE HEATING A CUCUMBER-HOUSE.

I have a lean-to house that I think of growing Cucumbers in. Along the front wall, looking south, is a brick pit, 3 feet wide and 3 feet 4 inches deep. The furnace is at the east end. I think of running a flue, three bricks-on-edge deep, carrying it along the centre, and bringing it back by the north wall, which is 8 feet 6 inches high. Shall I get bottom-heat enough, and what height should the slate be above the flue, and what is the best covering to get the greatest amount of heat? Would slate do at 3 feet from the furnace? Also be so good as to inform me if I should leave any holes in the wall to let the heat out into the house, and at what distance should they be above the flue, how large and how far apart.—L. B.

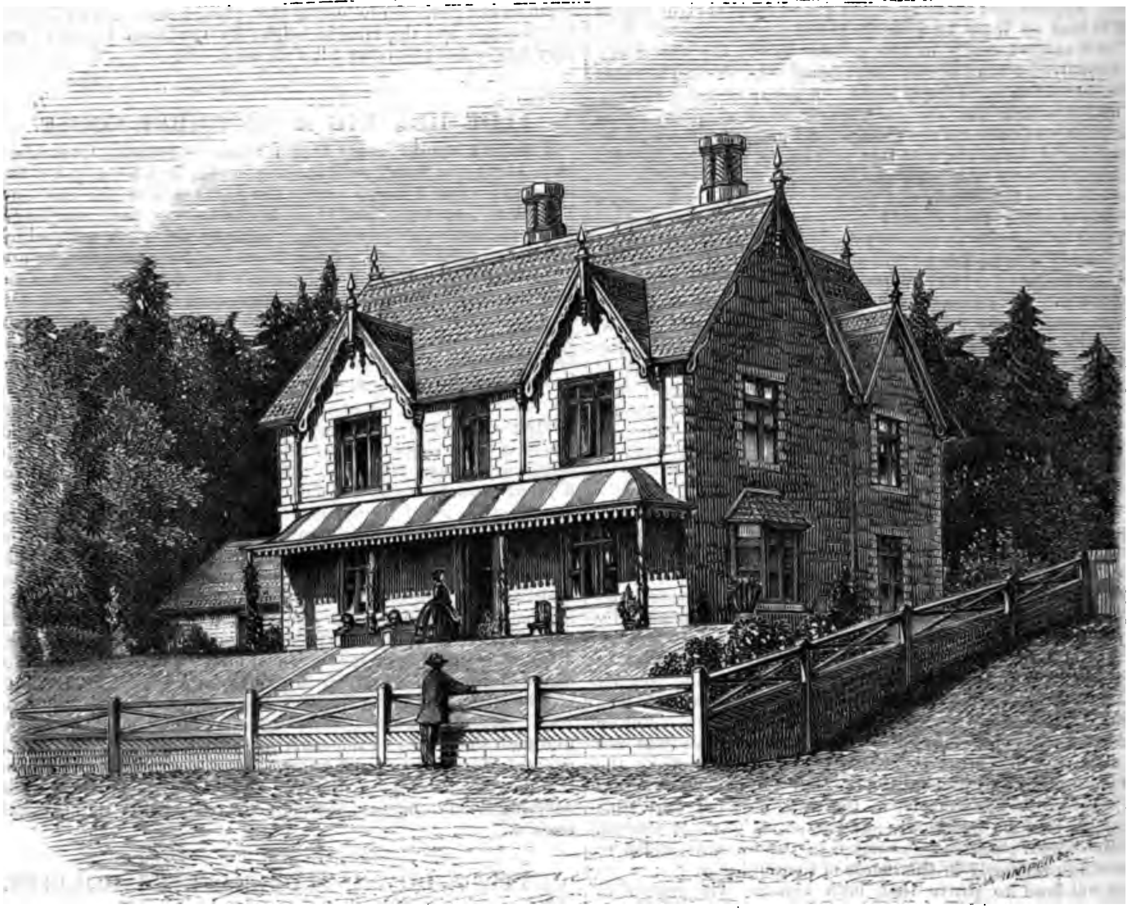
[We have said so much about all sorts of heat from flues lately that some of our friends tell us we are getting flue-crazed. There is not a single idea we can advance but has been given to repletion in late Numbers. We should prefer your flue for 3 yards or so from the furnace to be brick-on-bed—in fact, for a lasting affair, if we did not have it so high, we would make the whole of the flue in this pit brick-on-bed, and that open in the house brick-on-edge. Have stout slate by all means a foot above the flue, if such you prefer. We have scores of times stated what we like better, and which cannot waste or break, and that is clinker and rubble, finishing with fine-washed gravel before we put the soil on. You might have an opening in the side wall every 5 feet of 16 inches by 6 inches if you forced early. If you did not commence until February or March you would need no openings at all; the flue in the house will give plenty of atmospheric heat. We presume you do not mean covering any part of the flue with slate. As to the coverings that would give the greatest amount of heat, we do not know whether you mean coverings on the glass or coverings on the flue. In the former case the best covering would be rough wool, covered with a waterproofed surface.]

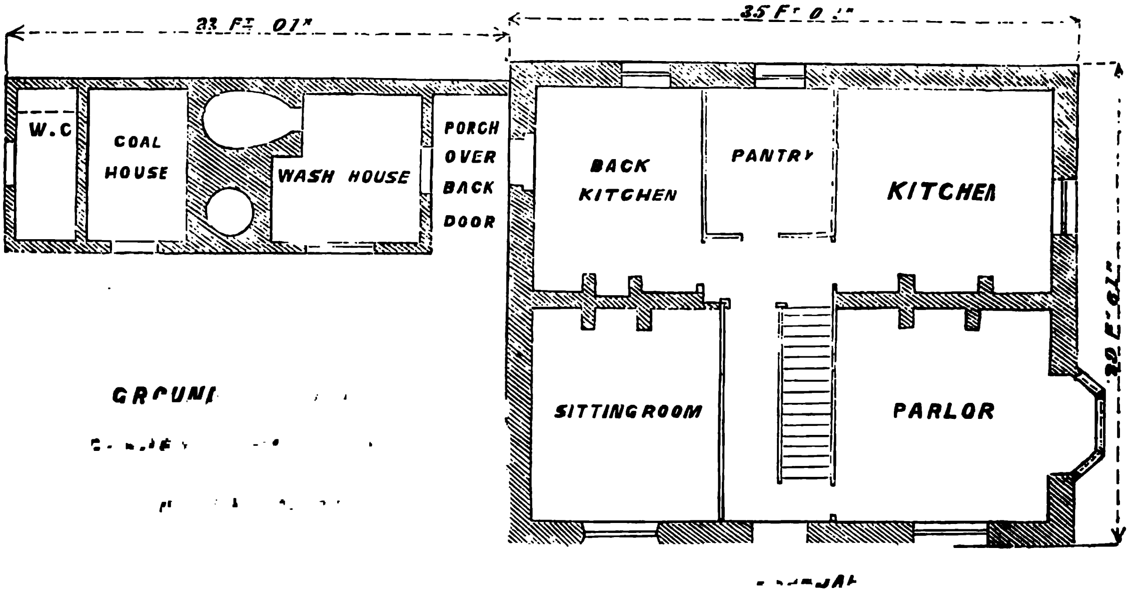
CUTTING DOWN OLD LEAFLESS HOLLIES.

Will you inform me what I ought to do with my Hollies? The last winter killed all the leaves and twigs. In the spring the twigs were all clipped off, leaving long bare arms standing out in all directions. These boughs last summer put out a cluster of short spurs at their extremities; all the rest of the branches are bare. Small shoots here and there grow out of the main stem. I fear me these long naked branches with their tufts of green leaves will never put out sufficient shoots to hide their nakedness. These trees used to hide very completely ugly walls, and I am afraid, judging from their present condition, they will never make a cover again. Am I right in my forebodings? Should I prune all these branches off close to the main stem, or should I dig the trees up (trees from twenty to thirty years old), and start afresh?—An Old Subscriber.

[At the end of next April cut the injured Hollies completely to the very surface of the ground. That is the only plan by which to test whether the frost was the real cause of their dying so much, or if the cause might not have been at the roots. If the frost was the cause you will have abundance of strong healthy shoots up directly from the roots, or stools as gardeners call them, and some of the young shoots will be from 3 feet to 4 feet in length, or ought to be from stubs which are between twenty and thirty years old. *Recollect*, however, that if you leave only 4 inches of the old stems above the ground uncut, you will miss the mark. This caution is not for yourself only, but for all whom it may concern about Hollies. It is well known that old injured Hollies will keep for forty years in a state between starvation and death; and it is equally well known that if the roots are good they would start afresh in forty weeks, if *the whole* of the plants above the collar or ground-line were cut off. Also, that if any lengths of the old stumps are left the roots can hardly budge. If your stools are not in prime promise by next October, grub up the whole lot at once, and have done with them. Trench and drain the ground and "start afresh."]

GARDEN COTTAGE AT LINTON PARK.





[illegible] the [illegible] engraving [illegible] Kentish [illegible], with [illegible] and the roof of plain and [illegible] substantial [illegible] collar tiles [illegible] alternate [illegible] situated in the park a short distance from the garden, and being on a rising ground with its principal front to the south, it is perfectly dry.

We also give a ground plan, which shows four rooms and a pantry, and on the floor above these are four good bedrooms and a store closet. There are also two good cellars underneath the two front rooms. The outbuildings, consisting of a washhouse, &c., are also good, the whole being well fitted up in every way.

As some inquiry has been made through our pages of Pitch Pine as being suitable for hothouse buildings, we may say that the staircase of this cottage, as well as some excellent cupboards, window-shutters, and doors, are fitted up with this wood, which being varnished looks remarkably well.

Another room (the parlour), is fitted up with oak of home growth, and looks also well, no paint being used, and it is a divided question whether the Pitch Pine or the English oak looks best. Both are certainly good, as likewise is everything connected with the cottage. Flavel's kitchener, we were told, answers there admirably as a cooking apparatus, and, altogether we have seldom seen a house, which, without assuming any uncalled-for outward show, contained so much of the aids to real comfort.

Now, Mr. Robson is head gardener at Linton Park, and the question then arises, Is such a cottage suitable, and to be recommended as a model residence for those who hold a similar situation?

To this a qualified answer must be given. For a head gardener at such a residence as Linton Park, fully qualified by education and attainments, and with a fitting salary, we do recommend Mr. Robson's cottage as an example of what a head gardener's dwelling ought to be. Its extreme neatness, its good, appropriate, and well-ordered furniture, are evidence not only of the mistress of the house being an excellent manager, but that the means are not deficient.

Where a gentleman does not reside in a mansion equal to that of Linton Park, and where the gardens are less extensive and the salary paid to the head gardener is smaller, then we advise that a less garden cottage, but one not less comfortable, be provided; for being over-housed is as great an evil to a gardener as to any other member of the community. In proof of this we give the following extract from a letter we received some little time since:—

"I know a gardener's cottage that cost more than £800, and the wages of the gardener are £70! How can a man with a family prudently furnish and keep such a house on such an income? I find that this furnishing of a house, and gentlemen expecting it to be respectably furnished, and on less wages than the above, is becoming a fruitful source of annoyance. I know one of the best gardeners, who is just now tied by the leg. He has done an immense amount of first-rate work, as artist, architect, and all the rest of it, and his wages have not been raised according to agreement; but in furnishing a large house he has parted with his ready money, and he feels himself thoroughly tied by the leg."

CONSTRUCTION OF A GREENHOUSE.

I AM about to erect a cool greenhouse of the following dimensions:—33 feet 6 inches, end to end, 12 feet (in the clear) back to front.

The roof is hipped. The ventilation I propose to have by means of the two end-sashes (under the hip), hanging in the centres; every alternate front sash will also open on hinges. Will this give sufficient ventilation? as the roof will not be moveable sashes, but fixed sash-bars. These will be 2½ inches by 1¾ inch.

The framework of the roof will be nine rafters 5 inches by 2½ inches, the ridge 5½ inches by 3 inches three tie-beams 6 inches by 4 inches from head to plate on back wall. Will this be too heavy, or obstruct the light too much? Would not a less number of rafters be sufficient? if so, what number would you advise? Would a less number of rafters and stouter sash-bars be advisable? The sash-bars would have an iron rod running through the centre from end.

In addition to the tie-beams there will be some three-quarter-inch rods from the bottom of the hip to the front roof. The top hip and back will be glazed with one-eighth-inch rolled plate. The glass on the roof will weigh some 700 lbs or 800 lbs., as I shall use one-eighth-inch rolled plate in size 10 inches by 12 inches.—OLD READER.

[There is no question but that by the means you propose you will have a very substantial house; and we would not like to interfere with your own plans, as you will like them best. Your cross-bearers might be one-and-a-half-inch iron rods, instead of wood. The number of your rafters does away with much of the economy of a fixed roof. For such a house ten such rafters at the ends, and two unequal divisions along the middle, 4½ inches by 3 inches, would be sufficient. Two cross-bearers might go for these two in the middle to the back wall, and beneath them a pillar of wood or metal might be placed for your sized glass; sash-bars might be used 3 inches by 1½ inch. If you run an iron rod all the way in the middle fastened to all the bars there would be no danger. However, we do not want to interfere with your plan, for it will be stable and lasting. You will not have enough of ventilation at the back. Every other sash should open; and if you object to open the doors, a piece at the angle of the roof at the end should also be made to open.]

DIFFERENCE IN TIME OF FLOWERING OF CROCUSES IN THE HOUSE.

NEMOPHILA INSIGNIS BLOOMING IN DECEMBER.

WILL you inform me why Crocuses planted in soil in an ornamental pot on the 13th of September, are not more forward than some planted on the 8th of October in tin saucers? Those first planted have been in a room, the temperature of which is from 50° to 60°. The others in one larger and of lower temperature. Also, can any one tell me whether Nemophila insignis sown in September ever flowers in the house at this time of the year? The seed sown was Carter's for autumn sowing.—MADELINE.

[There is six weeks' difference in the time of flowering of some Crocuses in the spring. Then if any of the very late kinds were potted in the middle of September, and an early kind not till a month later, the last would now be more forward. Nemophila sown in September will not bloom in-doors till next March, or out of doors till April. To have it in bloom in December the seeds should have been sown the last week of June. We had it thus in bloom when snow was on the ground.]

BANKS OF EARTH INSTEAD OF SHELVES IN A GREENHOUSE.

FRUIT TREES TRAINED ON A SLATE ROOF.

IN a greenhouse lately built I purpose to have, instead of the usual wooden shelf under the glass in front, a bed of earth in a wooden frame to rest the pots upon. This promises to be of service in several ways—thus, plants like the Calceolaria which object to too dry an atmosphere, may be plunged in it. In summer, if the roots from pots standing on it are allowed to run through, there will not be so much harm done when the watering-pot is forgotten. Seedlings again, may be raised in it. I shall have an opening of 2 inches broad running along the bottom of the frame covered with wire, and give the wood on either side a gentle slope towards this opening for drainage. If this wood were covered with galvanised iron or zinc, would it injure the roots?

Could we grow Vines on such a bed if it were a foot deep? On the rocky terraces of southern lands they flourish in less depth of soil than this.

I once saw some fruit trees, in Scotland, trained over a slate roof. Having a limited garden and some outhouses convenient for the experiment, I have planted some Pears to be trained in this way. A slate roof must be much hotter than a wall. Will you tell me whether slate will scorch and injure fruit where it touches it? If so, the wires on which the branches rest must be at least 6 inches from the slate.—WYE SIDE.

[You leave us a little in doubt as to the whole of the questions from not stating the width and height of the proposed bed instead of a shelf. The plan has been recommended in these pages for several purposes. Calceolarias and Cinerarias will do well out, but better not plunged. This may be too much for them, and they might so root out below that you could not move them without injuring them. Mr. Fish has several times stated how unsuitable such beds are for Pelargoniums, especially in winter and spring; but you could accommodate them with a board, or set them on a reversed pot. As a rule, inside of a house you will find it best to raise seedlings in pots, because you can move them just as you like to harden them off, &c. Iron probably will not do much harm under the circumstances, and zinc is liked by the roots of almost all plants, but if you have a front wall to your house, would it not be cheaper to run up a four-inch wall of brick inside, with a nine-inch pier every 8 feet or 10 feet for the inside boundary of your border, and by having holes at the base every 4 feet or so, you would let the drainage out, unless, indeed, you have a pipe below the border to take extra water outside the house at once, which would be better still? You might then have 6 inches or more at the bottom of open rubble for draining. If you have 2 feet or 3 feet in width, you may manage to grow good Vines in a depth of 12 inches or more, if you manure tolerably well on the surface. If you so use it for Vines it will be advisable in placing plants on the border in winter to place saucers beneath them, and even in summer to beware that the surface of the border is not soaked in some places and too dry in others. This plan would obviate the necessity for any wire bottoming. Your reference to southern lands is not quite analagous, because often with only a few inches of soil the roots can penetrate a good depth into the crannies and openings of rocks. However, with the cautions alluded to, we have no doubt but you will succeed. If you must use wood instead of brick, then we would advise you neither to have zinc nor iron, but have two boards, the outside some 1½ inch thick, and it will last longer if not painted, and an inner board separated from the outer by an inch of a division; this inner one to be half an inch thick, and pitched on both sides. So done it will last a long time, and when it decays you may slip down another one whilst the outer board continues fresh and good. A great deal of money is used in such cases for painting to make things look nice and hasten decay.

There will be little danger for trees on slate roofs, provided when young the branches do not absolutely touch the slates in hot days—an inch or two will be quite sufficient. When the trees pretty well cover the space, the branches will take no harm if they touch the slate, as the leaves will defend them. The slates will be warmer than a lighter wall in sunshine, but colder at other times, and in the hottest days the air a few inches from them will be cooler than if the wall was lighter.]

GAZANIA SPLENDENS.

To judge from the remarks of some of your correspondents, as a bedding plant the Gazania has not given them satisfaction. Notwithstanding their fierce onslaught upon its deficiencies, I have pleasure in fully endorsing Mr. Beaton's opinion respecting it. When gardener at Lennox Castle, in Stirlingshire, I employed it as extensively as I possibly could; and, notwithstanding, the season proved to be one of the worst on record for bedding plants, it gave me every satisfaction, as well as all others who saw it, especially my employers. When visiting Dalkeith late in autumn I saw it in fine condition. Mr. Thomson employs it alone with Calceolaria aurea floribunda with good advantage, its robust habit acting as a good support to the Calceolaria. I purpose employing it here (north of Ireland) next season somewhat extensively, feeling convinced, from what I have had to do with it, that I shall not be disappointed.—**JOHN EDLINGTON**, *Gardener, Crom Castle, Newtown Butler, Ireland.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

Cauliflowers, during the present very mild weather the glasses should be left off day and night, to prevent their drawing. Divest the plants of dead leaves, and look frequently for slugs. *Celery*, as it still continues to grow vigorously it will be necessary to earth it up, that whenever frost may set in it will not be injured so much as it otherwise would. *Herbs* to be taken up, and planted in boxes or pots, and introduced into heat as wanted for use. *Lettuce*, the young plants in frames to have the glasses left off day and night during mild weather. Watch narrowly for slugs, as they are particularly fond of this plant. *Mushrooms*, horse-droppings to be now saved for spring beds: this is the best season for saving them, as horses usually have more dry food than during the summer. The beds in bearing o be cleared from wet litter about every week, and a covering of dry hay put next to the bed, over which must be laid sufficient litter or other covering to preserve the beds from frost. *Rhubarb*, keep up a succession of this most useful esculent by potting old roots, and introducing them into a heat of 60°.

FLOWER GARDEN.

Shrubs may still be planted in favourable weather in all ordinary garden soils; but where the ground to be planted is of a clayey nature, and in an unkind state at present, it will be better to postpone planting until spring, meantime using every means to improve the state of the ground by digging, or trenching and ridging, for greater exposure to the pulverising influence of frosts and thaws, to bring it into a better state for planting in the spring. Rose-borders and beds to be well dressed with manure, which should be forked in lightly so as not to injure the roots.

FRUIT GARDEN.

Some wall trees—as Pears, Plums, Cherries, &c.—are often attacked by a species of scale insect: where such enemies are visible the infested trees should be well washed with a mixture of soft soap, tobacco water, and lime; half a pint of turpentine to be added to four gallons of the mixture when they are much infested. The lime is added to give consistence to the mixture, and to show that no parts of the tree are missed in dressing. The mixture to be applied, if possible, in dry weather, that it may remain on for some time. Apple trees against walls, or as espaliers, to be pruned. Cut off that part of the spur which bore fruit last summer down to the fruit-bud formed on the lower part of the stem of the spur, taking out all bruised or cankery branches, and leave a regular supply of wood throughout the whole. In pruning, cut away all shoots from Gooseberry trees, except one or two springing, as near as can be obtained from the origin of each main branch. Shorten the young shoot left at the top of each branch to about ten or twelve buds, and leave throughout the tree the fruit-bearing branches about 6 inches apart. In pruning the Currant keep a good supply of young shoots springing from the bottom of the tree, and cut out more or less of the old every year, never allowing a branch to remain more than four or five years, and head in the young shoots at the top to about two eyes of the main branch from whence they sprung. Where the Gooseberry and Currant trees are old and covered with moss a good dredging of powdered quicklime put on when the bark is moist will entirely destroy it, rendering the stems clean and the bark healthy. Prune the Raspberries in the open quarters; cut away all shoots that bore fruit last summer.

STOVE.

A moderate heat from 50° to 60° to be kept up with plenty of air. The Ixoras to be elevated near the glass to set their bloom; keep them comparatively dry. Stephanotis, Allamandas, &c., to be potted and trained preparatory to starting them into growth after Christmas. The staking of all succulent plants to be proceeded with in weather unfavourable for out-door operations.

GREENHOUSE AND CONSERVATORY.

We are now arrived at that part of the season when the nights are at their greatest length, and the few hours of light we have are but seldom clear and bright, and the external atmosphere often changing, so that the utmost caution is required in the application of heat, air, and moisture. Thorough cleanliness to be maintained, every decaying leaf and blossom to be at once removed, and every kind of plant to be supplied, when dry and approaching a flagging state, with tepid water. In addition to keeping the conservatory gay with blooming plants, let the arrangement of the pot plants be occasionally changed by grouping the plants somewhat differently, and adding a few striking ones—as some of the hardiest Palms, &c.—for effect.

FORCING-PIT.

Introduce such plants as are generally used for forcing, especially the sweet-scented things—Lily of the Valley, Sweet Briar, Lilacs, Roses, and bulbous plants. All plants intended for forcing to be kept under temporary covering of some kind—an open shed, or under the stage of the greenhouse. When Achimenes and Gloxinias are required to bloom early, a few pots may now be started in bottom heat.

PITS AND FRAMES.

As a change from the present mild to severe weather may come on suddenly be provided with ample means for covering these structures, should it occur. Mignonette and Neapolitan Violets will require an abundance of air to keep them from damping. Keep the bedding stock well ventilated, and the surface soil of the pots frequently stirred. Dust with sulphur Verbenas and any other plants attacked with mildew. Anything of which there is but a sparse supply of plants to propagate from to be placed in warm quarters at once, taking care to keep them near the glass, and free from insects, mildew, &c.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

SLIGHTLY forked among young Cabbages, planted a few more in case, with all our checking of growth of the earliest, a severe frost might be too much for them; but we hardly think so, as the leaves have been a little flaccid in bright sunshine ever since, which will enable them to stand frost better. Gathered any withered leaves from Brussels Sprouts, Scotch Kale, &c., so that the garden should have no unpleasant smell. Slightly forked again the Strawberry-quarter, to keep the surface loose until we get a frosty morning to give a little rotten-dung dressing between the rows. Collected leaves by the side of Box-edgings where they had blown by winds, and swept and rolled walks. Globe Artichokes and other things liable to injury being previously protected by litter.

FRUIT DEPARTMENT OUT OF DOORS.

Top-dressed young fruit trees, pruned and nailed when convenient. Gave all the air possible to lean-to orchard-house. Washed wall trees, as Pears, Cherries, &c., with soapsuds, with a handful of salt to three or four gallons, which helps to keep the stems free of moss and insects. If the suds are warm—say 140°, it will help much to clear shoots of scale. Cleared and whitewashed walls of houses in bad days, and thus filled up holes as much as possible, as avoiding nail-holes, we prefer wire trellising decidedly under glass for fastening trees to. *Shreds* and the holes made by *nails* are the best of all harbours for insects' eggs. Even on the open wall it is bad policy to use a shred a second time before it has been boiled in water, and then dried before using. Even nails are all the better of getting a good toast over the fire in an old kettle or shovel. In the case of decayed shreds fastened to nails, the burning process is the quickest and best for getting at the nails; as, passed through a sieve afterwards, all the ashes and bits of lime, &c., are at once got rid of. Many holes are made in walls quite unnecessary when nailing is adhered to by at once pulling the nail out of the wall. It should always be tapped on the head gently at first, which will so far prevent it bringing a piece of the plaster and wall with it when pulled out.

PLEASURE GROUNDS.

The leaves having now mostly fallen, have had on dry days all hands spareable cleaning and sweeping up, as decaying leaves either on grass or gravel have always a melancholy aspect, and besides every one of them may be turned to good use in the compost-yard or the fermenting-heap. The *walks*, from being so smooth, have become in shady places a little greasy on the surface, and after sweeping off what could be thus had, the teeth of a short-toothed rake were drawn through the worst places, just to make them rougher, and let the slight showers wash the surface; and then, as soon as a little dry, they will be rolled again, and present a comfortable foothold for the feet. We are no great advocates for digging walks at any time, there is so much trouble in getting them solid again, and more especially in winter. Kept digging up the flower-beds not planted as opportunity offers. A smooth lawn free of worm-heaps is a pleasant sight in winter. The safest remedy for *worms* is watering with fresh limewater. In rolling there is no necessity for the roller being heavy; we generally for such a purpose use a wooden one formed of a piece of a tree about 1 foot in diameter and 4 feet long, with wooden handle. This is very light, and even a stout lad can move it over a large space of lawn in a few hours. If the lawn is rough a heavy iron roll should be used at first. When there is continual rolling worms do not like it, and are induced to keep lower down out of the reach of the noise and racket.

IN-DOORS.

A fresh bed was made in the *Mushroom-house*, adding a little at a time for a fortnight, and treading and beating hard to keep out the air. At this season the difficulty is to get it dry enough, and, therefore, we were obliged to put a little fire heat on, and to let out the steam, which would have damped the beds too much. Fresh manure put in a low bed was covered with turfy soil to keep down any damp steam in this dull weather. The turf will make the bed all the more lasting. The bed referred to above has been spawned to-day, wrapping each piece of spawn about the size of a walnut in a little dry litter before inserting it, and, as the heat seems all right, will earth up in a day or two. As I stated the other week, could I get enough of material in summer I would fill the most of the beds in the Mushroom-house then, and leave them unspawned, and then when I wished to set them going I would mix 3 inches or so of fresh droppings with the bed, which would make it heat kindly; and when all right in that respect, insert the spawn, and cover with soil. We have done the same thing with boxes and large pots, and thus kept up a regular supply with them by spawning in succession. We consider this a better plan to depend upon than using large beds and large boxes, and expect them to produce almost continuously. In some cases they will do so, but in others they will not produce longer than a shallower bed, and then, as the coachman said, "Where are you?" when he contrasted his steady secure-going pace with the smash of the railway train.

Several correspondents have inquired, What is the best material for the shelves or beds of a Mushroom-house? and I say at once, Stone or slate. What I use is nothing fine, and is simply wood, and as a piece rots we add another. When that is the case, a sparred bottom—say made of pieces 3 inches wide, and 2 inches thick, and 2 inches apart, will last longer than a closer one, or boards close altogether. They are also more useful in two ways. Supposing that the upper bed is made first, and does not come as soon as you like, then the preparing for the under bed will throw a little heat into the upper one, and set the spawn a-working vigorously. When the bottom is thus open a crop can often be had below as well as above. Thus some long litter is thrown over the spars to prevent the shorter material falling through, then an inch or so of turfy soil is added; and if the bed is made at different times, so as not to heat violently, pieces of spawn may be strewed over the turfy soil before the layers of manure are added. In such a case we have had the bottom of the bed throwing out plenty of Mushrooms between the spars; and what is rather singular, though most of the Mushrooms will grow downwards so as to be easily gathered, many will turn back, and try and get their hooded tops upright into the bed again. I have found this more general in proportion to the darkness of the house.

MUSHROOM SPAWN MAKING.

This leads me to recollect, that, besides a correspondent to-day, I have had seven inquiries lately as to the making of Mushroom spawn, and all saying they can find nothing about it, though if my memory does not fail me, it was fully described about July or August, the most convenient time for making Mushroom spawn, because the material can be so easily dried. However, with shed room, or the means of drying under glass, &c., Mushroom spawn may be made at any time. There are many ways and many materials for making it, and so far as I know, successfully. I will describe one of the simplest. The quantity may be just what you like, but in similar proportions. Take a barrowload of horse-droppings as fresh as you can get them, and with nothing but their own moisture. Then pick up half a barrowload of cowdung as thick as you can get it. Break the horsedung nicely, either through the hands, or passing it through an inch sieve. Then mix the cowdung and the horsedung thoroughly together with a spade, fork, or mallet. The better it is mixed the better it will be, and if no water is required so much the better. The mass should be like stiffish leaven. If too thin when beat together, we have cut up some dry litter or straw half an inch in length, and mixed with it, to give it consistence, as the stiffer it is, like thick mortar, the sooner it will dry. The heap being all ready, make a little frame, as if for brick-making—say two boards 10 inches long and 3 inches deep for the sides, and two ends 4 inches wide and 3 inches deep, nailed together firmly. Choose a flat piece of board on which to make your bricks, and wet the surface with water. Place a pail of water beside you, dip your frame into the water, and then place it on the board, fill the frame with the prepared manure, press it firmly in, and draw a spade or trowel over it to make it all level, and then a stroke on the board with one end of the frame and the other held obliquely, will bring out your brick of manure as clean as any brick at a brick-making yard. Place the bricks as made on slips of boards, or at least on a hard surface. They will soon begin to dry, and before the sides are at all hard make two holes in each brick, one 3 inches from each end, either with your finger or with a round stick of a similar size. The bricks will require turning several times—first on their flat sides, and then on their edges, until they are nearly as dry as common bricks are before they are burned. Then these holes must be filled with spawn, and a little cowdung, &c., as before, daubed over them to prevent its falling out, and a small bed of fermenting matter being made, the bricks are laid on it and built in a heap, as open as possible, so that the heat can easily pass all through them and around them, and then they are all covered over with litter. Just as in a Mushroom-bed the heat must not be too violent. About 80° to 85°, not a degree more, will do. The heap must be frequently examined, and you will easily perceive when the spawn is running, and as soon as a brick is permeated all through with small white lines, it must be removed to a dry, cool place, where it will keep good for years. If the lines or spawn roots are as large as sewing threads they are too far gone. This is the mode I generally practise, but in all cases where only a little is used, it is best to buy it from a respectable dealer.

Plants, &c., much as last week.—R. F.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

PROPAGATING GERANIUMS BY THEIR LEAVES (*W. Henry*).—There is little or no advantage in propagating common Geraniums by their leaves; but when cuttings are made of a rare or valuable sort, every bud is of consequence. Then, instead of throwing pieces away, every bud with its leaf is rooted. The edges of the leaves of Geraniums turning brown indicate the want of sufficient moisture in the air around them.

SALT AS A MANURE FOR GRASS LAND (*W*).—Apply it in the spring with the guano; ten bushels to the acre will be enough, sow broadcast. Although the good effect of guano may be detected the second year after application, yet we prefer applying a smaller quantity annually. Salt and guano are preferable to lime as applications to poor light land.

ROYAL HORTICULTURAL SOCIETY'S EXHIBITIONS (*A Young Lady*).—Any one may exhibit either fruit or flowers, or both, although not a Fellow of the Society.

WILD FLOWERS OF GREAT BRITAIN (*Chemicus*).—This work will include all native plants used in medicine. We never heard of Stainton's "Infusoria."

BANKSIAN ROSES (*E. H. V. M.*).—The yellow and white Banksian Roses never flower well if they are pruned at the same time as other Roses. The knife, or the stopping with the finger and thumb, should not touch one of them from the 1st of September to the last day of May. That is the only secret in blooming them, and of blooming them early too, if they were properly "set off"—that is, if they were cut to near the bottom the first spring after planting them, and more than half way down the second year. After that, to be pruned like other Roses as soon as they have done flowering, and at no other time.

PASSION-FLOWERS AND IPOMÆAS IN A GREENHOUSE (*Eliza*).—You do not tell us what heat you propose having in the house, though that is everything as to the plants suitable. For common greenhouse to average 45° in winter. the two Passion-Flowers might be Colvilli, blue; racemosa cœrulea, purplish. And the best Ipomœa would be Sellowii, a bright pink, the plants losing the leaves in winter. If the house is to be kept a little warmer—say averaging 50°, Ipomœa Learii would be the best. To make the most of your space we would divide it into four by slate or wood, and then have the two Passion-Flowers, one of the Ipomœas, and Mandevilla suaveolens. All these we would advise you to purchase at once if you wish a quick show. Six inches may be devoted to drainage, and 9 inches to rough heath mould and rotten turf from loam, and the upper part of turfy loam and heath mould, with some nice leaf mould and charcoal, and plant as soon as you get the plants, but give but little water until growth is proceeding in spring.

BORAGE FLOWERING (*J. L.*).—If the seed of Borago officinalis is sown early in the spring the plants usually, but not always, bloom late in the autumn of the same year.

APPLE AND PEAR TREES FRESHLY PLANTED (*A. B.*).—The shoots may as well be shortened a little, but it depends greatly on what is wanted. If large well-furnished trees are wanted, prune back pretty freely. If small, compact, early-fruiting plants are desired, we would merely nip the points out.

LARGE BEGONIAS (*Idem*).—Such Begonias will keep in a temperature of 50°, though the leaves may get shabby, but they will stand one of 70° and look fresher. The potting depends on the condition of the plants, the soil, [illegible] is wanted. [illegible] merely wished to keep the plants over the winter and the soil was fresh and in good order, we would keep the plants rather dry and coolish, and not repot. If we wished to grow on now we would either top-dress or repot. If the soil was wet, sour, and cloggy, we would change it in any case, and put in smaller pots at first.

FLUE-HEATED CUCUMBER-PIT (*A Subscriber*).—We do not think we can add a single word to what we have repeatedly said of late on growing Cucumbers in pits heated by brick flues. We do not know what you mean by covering the flue with slate. Is it to go over the common covering? We have frequently stated that slate is a bad covering for flues, especially if near the furnace. We have no information to enable us to advise you how to manage your poultry to advantage.

GLASS WALLS (*I. E. L.*).—The objection to glass walls when first introduced was the small space enclosed by them. We would like 10 feet or 12 feet at the base, even better than 8 feet, and regular orchard-houses rather than glass walls. For all tender plants such form of houses should stand nearly north and south. If in your northernmost wall you built such a house, and allowed the south front to be completely covered with Peaches, you could not expect those on the northern side to do quite so well, and if you forced the Peaches much it might be too much for Cherries. If you did not take the south trees to the top, the back ones would ripen pretty well. All other things, no doubt, would do well; and fruit all the better for the protection if plenty of air were given in hot weather.

CAMELLIA BUDS FALLING (*An Old Subscriber*).—It is not usual for unhealthy Camellias to be so covered with flower-buds. The evil you speak of happens from two causes—when the ball of large plants has been allowed to get dry in the centre from frequent but ineffectual surface-waterings, and when the plants have become waterlogged from defective drainage. In either case it will be well to fresh-pot in February. If the latter cause should be the reason it may need a smaller pot and light sandy soil, but the bottom heat should be continued no longer than the roots begin to work freely. They may then be repotted again, kept shaded and hardened off by degrees after the young wood is made. If deficient water has been the reason, firming the soil at the sides of the pot, and raising a mound of soil there to throw the water into and through the centre of the ball, may be all that is needed, with a little extra shaded heat when making fresh wood.

CINERARIAS DAMPING OFF (*H. S.*).—Do we understand you right, that you can only get to your pit and give air by the door? If so, that explains the whole affair of damping. The mere open door will not give a thorough ventilation, and it may give too much in cold weather. The top of the sashes should be capable of being raised, or openings should be made in the back wall, or ventilators placed in the roof back and front. If you put a fire on in dull, wet, but warm weather, and could not ventilate properly, you would increase the damping and dripping of water. Air may be given pretty freely when the outside temperature is above 38°, but sparingly if below that. When in flower the temperature should be higher. Your mode of management is right enough as respects spring flowers. If you wanted them in winter you must sow earlier. We may give an outline of management, but we could only repeat what has been said. As to many ways of doing things, and yet only one right way, you are completely at sea. All the many ways may be right ones if consistently followed out according to the circumstances.

AZALEA LEAVES (*T. H. J.*).—On examining the leaves very minutely we thought we saw marks of where thrips had been on one. all the rest seemed right enough, and merely showing the effects of age; for it is just as natural for an Azalea to shed part of its leaves as for a Lilac to shed all, and a Laurel to shed some. If, however, you are sure on inspection that there are live thrips you cannot smoke the plants too soon; and had better repeat the process several times. We are not sure of the plant: the Burning Bush is Euonymus americanus, which does not require a pot or a house. The Pistol, or Artillery plant, is the Pilea muscosa, a small stove plant with a thicket of leaves and small inconspicuous flowers. If this is the plant it will be bad to clean, better cut it back to near the soil, wash it with soap and water, take away the surface soil and transfer the plant to a clean pot of the same size, and set it in a warm place; and when broke shake the old earth away and repot. For Mushroom spawn, see "Doings of Last Week."

CLAY PAINT TO DESTROY SCALE (*J. Remoir*).—This for brushing over the stem and branches of Peach trees is made in the proportions of half a pound of soft soap and one pound of sulphur to four gallons of water. Boil them together, and when cold add as much clay as will render the mixture of the consistency of cream. "The Cottage Gardener's Dictionary" shows where the emphasis is to be in pronouncing each name; but when you have any doubt you had better consult some well-educated person.

GRASS IN FRONT OF HOUSE (*D. T., Kent*).—Sowing Italian Rye Grass was a great mistake, as the ground was intended for permanent pasture. No wonder that it is coarse, tufty, and unsightly. We recommend that the field be entirely broken up, sown with Oats, and at the same time with seeds of the permanent grasses suited for the soil, which may be obtained of any seedsmen who pay especial attention to that object, and who advertise in our columns.

TURNIPS FOR SEED (*N.*).—Let them remain where they are until February. Take them up without injuring the tap root, plant them in your kitchen garden, burying them to half the depth of the bulbs, placing a stout stake firmly by the side of each to tie the stems to as they ascend; and taking care that no other Turnip, or, indeed, any Cabbagewort or Radish blooms in their neighbourhood. A specimen of Globe Turnips, 12 inches in diameter is worth raising seed from.

OPERA GIRLS—TACAMAHAC (*J. G., Cumberland*).—Opera Girls is the popular name of Mantisia saltatoria. It is drawn in the "Botanical Magazine," t. 1320, and there thus described. "At the nursery of Lee & Kennedy, where our drawing was taken in June, the blossoms have been fancifully compared to dancing opera girls, the yellow nectary making their petticoats, and the outer laciniæ their blue jackets with lappets, and the filaments with their appendices their arms and necks; the latter, to be sure, rather disproportionately long." Tacamahac is a gum, and the tree supposed to yield it is Elaphrium tomentosum, but the tree spoken of by Abercrombie as the Tacamahac, is a species of Poplar, Populus balsamifera, or P. tacamahaca as it used to be called.

GARDEN PLAN (*Maggie*).—The arrangement is original, and the planting is exceedingly well done. You have the best proportions and the best positions of and for Geraniums and Calceolarias of all the plans yet sent us. That kind of design is always and in all places better on gravel than on grass.

Young Ferns Decaying (*E. G. K.*).—The soil must be kept too damp without enough of ventilation in dull weather.

Names of Plants (*A Stafford Subscriber*).—1, Asplenium ruta muraria; 2, Polystichum aculeatum lobatum; 3, Asplenium adiantum nigrum; 4, Polypodium vulgare crenatum; 5, Platyloma falcata; 6, Blechnum spicant. (*T. B.*).—1, Pteris (pyrophylla) argyræa; 2, Pteris (cretica) albo-lineata; 3, Pteris (aspericaulis) tricolor. (*N. Travis*).—Begonia argyrostigma. It is a handsome species. (*E. Roberts*).—Begonia sanguinea.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE POULTRY EXHIBITION AT THE CRYSTAL PALACE.

The popularity of the Poultry Show at the Crystal Palace has not in any way decreased—indeed, the opinion is universally expressed that the one just held has proved itself the best of any, whether the quality of the birds or the number exhibited are the matters of consideration. Perhaps this result is greatly secured from the far more extended attention now publicly rendered to matters connected with poultry year by year. In all localities fresh shows are being instituted, and these first fostering a taste for poultry breeding in their immediate neighbourhoods afterwards extend themselves by swelling the current of our largest meetings, exhibitors being anxious to secure the greater honours there held out to successful ones. From this single cause it arises that we now see so many new names in the catalogue of competitors at the Crystal Palace and Birmingham Shows. It is worthy of especial remark, too, that among these new comers are now also to be frequently found the principal prize winners. This is precisely as it should be, rivalry inevitably tends to improvement, and in no case more surely than in poultry culture. Again, any one taking an interest in these matters cannot fail to observe that those breeds most notorious for their general utility bear the most extended proofs of improvement. Poultry breeding has settled down, not as a fancy or hobby, but, on the contrary, now developes itself as a really important feature in the food supply of the people. Firmly established as it now is, little doubt remains that even greater improvements in breeds and crosses will yet ensue; nor it is not at all improbable that new varieties of poultry will be speedily added to the list of those at present generally acknowledged in our prize schedules.

The *Spanish* classes at the late Crystal Palace Show were of first-rate character, the show of hens and pullets being remarkably good. It may be stated without qualification of any kind that the *Dorkings* were never equalled as a whole at any previous poultry exhibition; whether held at the Palace or elsewhere, they were the leading feature of the Show. An incident connected with the arbitration of the Grey Dorking chicken class is one that bespeaks forcibly how unprecedentedly this variety of poultry is improving. It will be admitted that Messrs. Andrews, Baily, and Hewitt, who officiated as Judges, are men practically conversant with the office of arbitrators, and well up to their work, whatever contingency may arise in poultry judging; yet with their combined energies an hour passed away in awarding the premiums to this class only. Many, very many, pens quite worthy of the highest position at customary shows were here only able to attain a high commendation; and it is only fair to the arbitrators to say the amount of high commendations and commendations might have been greatly increased (and most worthily too) had time permitted. Scarcely one pen approaching mediocrity could be pointed out. The Buff *Cochins* were first-rate, Mr. Tomlinson, as of late years customary, taking the van. The cock in this pen is a gem; but we confess the head of one of the hens is so coarse as to prove a considerable drawback to an otherwise faultless trio. We drop this suggestion, that should any very close competition arise such an objection might draw the balance adversely; and with Mr. Tomlinson's large stock, no doubt an improved selection might prevent the possibility of such a contingency. Mr. Stretch's pen of Buff chickens were indeed covetable; but the prohibitory figure of £75 prevented their appropriation. The Partridge Cochins showed at least an equality of advancement to the lighter coloured ones. The *Game* classes were worthy of highest mention, and, most singularly, not a few of the principal premiums were allotted to entirely new exhibitors. If these classes continue to increase in popularity as they have done of late years, the entries will certainly call for even additional reward; for the Game entries are everywhere now-a-days the most extensive, saving r some few particular cases where Dorkings are locally popular. In the Game fowls, as a whole, the Brown Reds were the most perfectly represented. The *Hamburghs*, though good, were scarcely able to maintain their position of former years, more particularly the Pencilled ones. A better show of *Polands* has been but rarely seen; but the old fault (always fatal to success) of hump-back had evidently been quite overlooked by more than one competitor. Sebright *Bantams*, and, in fact, all Bantams, were marvellously good classes. Among them were exhibited for the first time Dumper Bantams—real Scotch Bakies in miniature—and also Silky Bantams quite distinct from the well-known Silky or Negro fowls, but closely resembling the somewhat uncommon Emu fowl.

The *Turkeys*, *Geese*, and *Ducks*, were as uniformly excellent as could be desired; and even the close test of weighing brought about but little distinction in many instances.

The *Pheasant* classes proved a very great attraction to visitors.

It is almost needless to say the indefatigable Secretary, Mr. Houghton, was never from his post, and that under his experienced management everything went off most satisfactorily. To that gentleman's unvarying courtesy to every one, and heartfelt anxiety for the perfection of the general arrangements, is to be attributed the now high position of the Crystal Palace Poultry Show.

LORD TREDEGAR'S POULTRY SHOW.

December 17th.

The following prizes were awarded:—

Spanish.—First, J. Martin, Mildenham Mill, Claines, Worcester. Second, A. Heath, Calne, Wilts. Commended, R. Crawshay, Cyfarthfa Castle, Merthyr. *Chickens.*—First, J. Parson, Angel Inn, Maesteg, Bridgend. Second, W. Powell, Gaer, Newport. Highly Commended, Mrs. C. A. Lewis, Glyn Fedr, Crickhowell; R. Crawshay. Commended, J. Llewellin, Caerphilly, Glamorganshire.

Dorking (Coloured).—First, L. A. Homfray, Woodlands, Newport. Second, C. Smith, Great Dumford, Salisbury. Highly Commended, Capt. F. T. Parker, Rockfield, Monmouth; J. Buckley, Penyfai House, Llanelly, Caermarthen; C. J. Thomas, Bewell House, Hereford. Commended, R. H. Nicholas, Yewberry Cottage, Malpas, Newport; Miss L. Crawshay, Caversham Park, Reading. *Chickens.*—First, J. A. Herbert, Llanarth Court, Abergavenny. Second, Capt. F. T. Parker. Highly Commended, C. B. Fox, Malpas, Newport; J. Buckley; Capt. F. T. Parker. Commended, J. Logan, the Maindee, Newport; R. Crawshay, Cyfarthfa Castle, Merthyr; C. J. Thomas.

Game (any variety except White or Piles).—First, J. Martin, Claines, Worcester. Second, W. Crawshay, Ty Forest, Pontypridd, Glamorgan. Highly Commended, W. Crawshay. Commended. R. Roberts, Llangibby, Usk; E. G. Jarvis, Itton, Chepstow; J. H. Braikenridge, Chew Magna, Bristol. *Chickens.*—First, J. Llewellin, Caerphilly, Glamorganshire. Second, W. Nicholas, Caerphilly, Glamorganshire. Highly Commended, J. Garland, Weston Birt, Tetbury, Gloucester; W. Crawshay, Ty Forrest, Pontypridd. Commended, R. H. Nicholas, Yewberry Cottage, Malpas, Newport; J. H. Braikenridge; W. Crawshay.

Game (White or Piles).—First and Second, J. Horton, Shirenewton, Chepstow, Highly Commended, J. B. Weeks, Bromyard. *Chickens.*—First, W. Nicholas, Caerphilly, Glamorganshire. Second, H. Baker, Worcester. Highly Commended, J. Horton.

Cochin-China.—First, T. Stretch, Marsh Lane, Bootle, Liverpool. Second, J. Carr, Hafod, Swansea. Highly Commended, H. Tomlinson, Balsall Heath Road, Birmingham. Commended, R. Everett, Gibraltar Cottage, Monmouth; Miss A. Wilcox, Nailsea Court. Bristol. *Chickens.*—First, H. Tomlinson. Second, J. Garland. Weston Birt, Tetbury. Gloucestershire. Commended, W. Cuff, St. Fagans, Glamorganshire; R. Everett.

Malays.—First and Second, J. J. Fox, Devizes, Wilts.

Hamburghs (Golden-pencilled).—First, C. H. Wakefield, Malvern Wells. Second, A. Nuttall, Newchurch, near Manchester. Highly Commended, J. Richards, Spitty Farm, Abergavenny; R. Crawshay, Cyfartha Castle, Merthyr.

Hamburghs (Silver-pencilled).—First, T. W. Walsh, Worcester. Second, J. Garland, Weston Birt, Tetbury, Gloucestershire. Highly Commended, J. Martin, Claines, Worcester. Commended, J. Martin.

Hamburghs (Golden-spangled).—First, T. E. Thomas, Newport. Second, W. Cuff, St. Fagans, Glamorganshire.

Hamburghs (Silver-spangled).—First, G. Hoskins, Newport. (Second withheld.)

Polands (Black with White Crests).—First and Second, T. P. Edwards, Lyndhurst, Hants.

Polands (Golden or Silver).—First, Mrs. Blay, The Poplars, Worcester. (Second withheld.)

Bantams (Game).—First, R. Liscombe, Tamer Brewery, Devonport. Second, R. H. Nicholas, Yewberry Cottage, Malpas. Third, V. Sandford, Chatsworth Lodge. Mannameade, Plymouth. Highly Commended, V Sandford; E. Payne, Wharf, Cardiff. Commended, R. Liscombe; R. H. Nicholas. (The whole class meritorious.)

Bantams (any other variety).—First, Miss Everett, Gibraltar Cottage, Monmouth. Second, Mrs. A. White, Mannameade, Plymouth. Third, W. Powell, The Gaer, Newport.

Any other Distinct Breed.—First, A. Heath, Calne, Wilts. Second and Fourth, R. H. Nicholas, Yewbery Cottage, Malpas. Third, T. R. Williams, Dany Rhiw, Maindee, Newport. Highly Commended, J. Hinton, Hinton, near Bath; R. H. Nicholas; J. Weeks, Bromyard. Commended, A. Heath; J. Hinton; Mrs. Blay, The Poplars, Worcester.

Guinea Fowls.—Prize, Capt. F. T. Parker, Rockfield, Monmouth.

Ducks (Aylesbury).—First, J. Richards, Spitty Farm, Abergavenny. Second, J. Logan, the Maindee, Newport. Highly Commended, R. Crawshay, Cyfartha Castle, Merthyr; L. A. Homfrey, Woodlands, Newport; J. Richards, Spitty Farm, Abergavenny. Commended, W. Powell, the Gaer, Newport; Mrs. T. Powell, Coldra, Newport; J. Logan.

Ducks (Rouen).—First, W. Powell, the Gaer, Newport. Second, J. H. Brackenridge, Chew Magna, Bristol. Highly Commended, Miss L. Crawshay, Caversham Park. Commended, R. Crawshay, Cyfartha Castle, Merthyr; J. H. Brackenridge; Rev. H. G. Bailey, Swindon, Wilts.

Geese.—First and Second, R. Rees, Coldbrook Cottage, Abergavenny. Highly Commended, A. Cuthbertson, Cefnlleche, Llangibby. Commended, Miss L. Crawshay, Caver-ham Park, Reading.

Turkeys.—First, Miss J. Milward, Newton St. Loe, Bath. Second, W. B. Hawkings, Pontymoile House, Pontypool. Highly Commended, W. Crawshay, Ty Forrest, Pontypridd; Mrs. E. Everett, Gibraltar Cottage, Monmouth. Commended, C. Lyne, Brynhyfryd, Newport; R. Crawshay, Cyfartha Castle, Merthyr.

Any New Variety of Ducks, Geese, or Turkeys.—First, J. Martin, Claines, Worcester. Second, Mrs. Blay, the Poplars, Worcester. Commended, Miss J. Milward, Newton St. Loe, Bath.

Spanish Cock.—Prize, J. Parsons, Meusteg, Bridgend. Highly Commended, J. Carr, Hafod, Swansea; Mrs. C. A. Lewis, Glyn Pedr, Crickhowell.

Dorking Cock.—Prize, R. Crawshay, Cyfartha Castle, Merthyr. Highly Commended, R. Everett, Gibraltar Cottage, Monmouth; J. Logan, the Maindee, Newport. Commended, Capt. F. T. Parker, Rockfield, Monmouth.

Game Cock.—Prize, J. Martin, Claines, Worcester. Highly Commended, W. Crawshay, Ty Forrest, Pontypridd. Commended, C. P. Betts, Newport.

COTTAGERS' PRIZES.

Any Distinct Breed of Fowls.—First, W. Attwells, Malpas, Newport. Second, Third, and Fourth, Miss M. Pillinger, Malpas, Newport. Fifth, C. Ray, Bassalleg, Newport.

Any Distinct Breed of Ducks.—First and Second, W. Attwells, Malpas, Newport.

Judge, Charles Ballance, Esq., 5, Mount Terrace, Taunton.

KENDAL POULTRY SHOW.

December 19th—21st.

The Show just closed, at the Shakspere Assembly Room, Kendal, is the seventh Meeting of this Society. On all the previous occasions the Kendal Shows have held a high place in the esteem of poultry amateurs; and, although the Birmingham, Crystal Palace, and the Manchester Shows this year have taken place so rapidly upon each other, and closely about the time of the Kendal Show, still that Committee may well congratulate themselves on finding their Meeting for 1861 has improved rather than deteriorated.

On entering the Exhibition, Black *Spanish* were the variety that first met the eye of visitors, and a goodly array were mustered as we have seen at any local shows for many years past. It will form no matter of surprise to find that Mr. Henry Lane, of Milk Street, Bristol, took precedence with his so-frequently-successful pen of adults; Mr. Fowler, of Aylesbury, proving a very good second; and the third prize was secured by Mr. Teebay's well-known pen of last year. The ravages of time however, tell not less powerfully on poultry than on ourselves—the unapproachable old cock, that for the two last seasons was the coveted one of all others by our principal Spanish breeders, is now become a mere wreck of former days. Blind with age, and grown listless from infirmity, he still stood highly as an attraction for his former exploits, and many were the remarks we heard made expressive of astonishment at the extraordinary change just described. The bird stood motionless for hours together, and even when touched quickly lapsed into his former dulness. On the best authority we are informed, that, within twelve months' past thirty-five guineas were offered to, and refused for this one bird only, by the breeder of it, Mr. Teebay; that gentleman still evincing great interest and sympathy in its welfare for his past good deeds. Perhaps there is not any fowl still living that has taken so many Silver Cups and first prizes as this old favourite; but the days of triumph are to him a bygone. The Spanish Silver Cup, however, open for competition by either old or young birds, was well won by a son of this veteran prize-taker, accompanied by two pullets of great merit—a fact easily imagined, when on reference to the prize list it will be found the celebrated strain of Mr. Rodbard, could only hold a second place.

In *Dorkings* the Show stood exceedingly well. A pen of Silver Greys, belonging to Mr. Ruttlidge, of Kendal, obtained the Silver Cup; they were adults, and were shown in a most praiseworthy condition. Mr. Seddon, of Prescot, and Mr. Dolby, of Grantham, had a hard pull for the mastery in the Dorking chickens.

In *Cochins* the Buffs and Dark-feathered ones all competed in one general class. Mr. Elijah Smith, of Manchester, gained the Silver Cup for Cochins with a pen of Partridge-feathered ones; Mr. Copple, of Prescot pressing hard with a first-rate pen of Buffs. Mr. Stretch's pen of Buff chickens were deservedly at [illegible]

In the *Game* classes the Show stood a perfect success. It was a certainty, however, that the Brown Reds were the best feathered, and, consequently, swept the board of the principal premiums—in fact, both the Silver Cups for Game were taken by this variety. It is somewhat singular that the White Game completely left behind the Pile birds—a circumstance of very rare occurrence where the competition is general between them.

It is difficult to assign a reason for such being the case, yet it is certain that the various classes for *Hamburghs* and *Polands* presented the weakest amount of entries we can call to recollection. This falling off is a matter for regret, as unquestionably these showy varieties are always among the favourites of visitors.

Again, in *Bantams*, not a solitary bird of either coloured Sebright was exhibited, and the entry for both Blacks and Whites was also meagre; but the Game Bantams made ample amends, for they formed a principal feature of the Show. We must draw especial attention to the Duckwings of the Hon. Secretary, Mr. Whitwell; they are gems, whether for size or purity of colour.

The Aylesbury *Ducks* were very good, and Mr. Fowler as might be expected stood A1; but it remained for the Rouen class to prove the closest competition on record. Out of twelve pens, all perfect in feather and condition, only bare three-quarters of a pound existed in the most opposed weights. Again, between the silver-cup pen and second-prize scarcely two ounces drew the balance in favour. In the "any variety" class for Ducks, Mr. Earle, of Prescot, and Mr. G. S. Sainsbury, of Devizes, exhibited capital pens of Buenos Ayrean, and took relative positions as just named. Mr. Pease, of Darlington, taking third with a pen of very good White Call Ducks.

The *Pigeons* were good, but the pens for the larger varieties were decidedly too small, and not a few were placed too high above spectators to be easily inspected. An improved arrangement as to these birds in future meetings is determined on.

With this, our shortcoming, it is justice to say, we never remember seeing poultry better or more carefully attended than at Kendal—everything betraying perfect system and order, for whenever wanted the Committee were at their post.

Mr. Edward Hewitt, of Eden Cottage, Birmingham, and Mr. Thomas Challoner, of Whitwell, Chesterfield, were the arbitrators; and we express the opinion of those gentlemen when we say the competition in the Game classes was far beyond precedent in this locality.

Spanish.—First, H. Lane, Bristol. Second, J. K. Fowler, Aylesbury. Third, R. Teebay Fulwood, Preston. Commended, G. Robinson. *Chickens.*—Cup, R. Teebay. Second, J. R. Rodbard, Bristol. Third, E. Brown, Sheffield. Highly Commended, H. Lane; J. K. Fowler. Commended, J. P. Harrison, Kendal; F. Crook, Harrington Street, London.

Dorkings (Coloured or White).—Silver Cup, W. W. Ruttlidge, Kendal. Second, J. Robinson, Garstang. Third, W. Seddon, Prescot. Highly Commended, H. W. B. Berwick, Helmsley. Commended, J. Shorthose, Newcastle-on-Tyne; W. Dolby, jun., Grantham. *Chickens.*—First, W. Seddon, Prescot. Second, W. Dolby, jun. Third, W. W. Ruttlidge. Highly Commended, W. Copple, Prescot. Commended, Rev. J. F. Newton, Kirkby-in-Cleveland.

Cochin China (Cinnamon and Buff, or Brown and Partridge-Feathered.) Silver Cup, E. Smith, Manchester. Second, W. Copple, Prescot. Highly Commended, T. Stretch, Liverpool; J. Shorthose, Newcastle-on-Tyne; W. Copple; J. Bell, Kirkgate, Thirsk. Commended, H. Tomlinson, Birmingham. *Chickens.*—First, T. Stretch. Second, J. Bell. Highly Commended, W. Jackson, Bolton-le-Sands; Miss V. W. Musgrove, Ormskirk. Commended, E. A. Aglionby, Wigton; A. Worthington, Bolton-le-Sands.

Cochin China (White or Black).—Second, G. C. Whitwell, Kendal (First withheld). *Chickens.*—First, W. Copple, Prescot. Second, G. C. Whitwell. Commended, R. Loft, Woodmansey; G. Williamson, Nantwich.

Game Fowls (White and Piles).—First and Second, G. C. Whitwell. Third, F. Atkinson, Milnthorpe. *Chickens.*—First, W. Wilkinson, Whitbarrow. Second, G. C. Whitwell. Third, J. Clarke, Levens, Milnthorpe. Highly Commended, G. Helliwell, Sheffield. Commended, J. Clarke.

Game Fowls (Black-breasted and other Reds).—First, N. Grimshaw, Pendle Forest, Burnley. Second, G. Helliwell, Sheffield. Third, J. Hindson, Liverpool. Highly Commended, R. Swift, Southwell. Commended, J. Fletcher, Manchester. *Chickens.*—Silver Cup, G. Helliwell, Sheffield. Second, E. Aykroyd, Darlington. Third, G. C. Whitwell, Kendal. Highly Commended, J. Heath, Nantwich; A. B. Dyas, Madeley; W. Bentley, Low Moor, Yorkshire; R. I. Robinson, Ulverston. Commended, M. Graham, Kendal.

Game Fowls (any other variety).—First, J. Hindson, Liverpool. Second, G. C. Whitwell, Kendal. Third, W. Brocklebank, Ulverston. Commended, W. Thompson, Kendal. *Chickens.*—First, R. Bateman, Kendal. Second, W. Bentley, Low Moor, Yorkshire. Third, J. Barrow, jun., Kendal. Commended, W. Wilkinson, Milnthorpe; J. Smith, Kendal.

Hamburghs (Golden-pencilled).—First, J. Robinson, Garstang. Second, R. R. Tulip, Monkwearmouth. *Chickens.*—First, T. Parkinson, Accrington. Second, T. Shaw, Kirkham. Highly Commended, R. I. Robinson, Ulverston.

Hamburghs (Golden-spangled).—*Chickens.*—First, J. Cragg, Kendal. Second, R. Graveson, Kendal.

Hamburgh (Silver-pencilled).—*Chickens.*—First, C. Moore, Preston. Second prize withheld.

Hamburgh (Silver-spangled).—First, R. Teebay, Fulwood. (Second prize withheld). *Chickens.*—First, R. Beard, Kendal. Second, W. Whitwell, Stockton-on-Tees.

Polands (any variety).—First, H. Johnson, West Sunderland. Second, J. Heath, Nantwich. *Chickens.*—First, G. Pease, Darlington.

PRIZES FOR SINGLE COCKS.

Spanish Cock.—First, G. Robinson, Kendal. Second, R. Teebay, Fulwood, Preston.

Dorking Cock.—First, D. Steel, Windermere. Second, W. Seddon, Prescot. Highly Commended, D. Hetherington, Penrith; J. Robinson, Garstang.

Cochin-China Cock.—First, W. Seddon, Prescot. Second, R. Farrer, Bolton. Highly Commended, E. Smith, Manchester. Commended, T. Ransome, Rest Bank; Miss V. W. Musgrove, Ormskirk.

Game Cock.—First, G. Helliwell, Sheffield. Second, T. Burgess, Whitchurch, Salop. Third, J. Fletcher, Stoneclough. Fourth, N. Grimshaw, Burnley. Highly Commended, Mrs. Bateman, Sedgwick; C. Moore, Preston; J. S. Butler, Poulton-le-Fylde; G. Lingard, jun., Birmingham; J. Hindson, Liverpool. Commended, J. Heath, Nantwich. *Cockerel.*—First, S. Butler, Poulton-le-Fylde. Second, G. C. Whitwell, Kendal. Third, M. Ellithorne, Kendal. Commended, J. Orr, Cartmel, Lancashire.

Game Bantam Cock.—First, Miss V. W. Musgrove, Ormskirk. Second, J. Cragg, Kendal. Highly Commended, C. Bower, Poulton-le-Sands; Mrs. Cragg, Kendal; G. C. Whitwell, Kendal. Commended, J. Mashiter, Ulverston.

Bantams (Game).—First, G. C. Whitwell, Kendal. Second, E. Holdsworth, Leeds. Highly Commended, J. Grocott, Nantwich; J. Mashiter, Ulverston; Miss V. W. Musgrove, Aughton, Ormskirk.

Bantams (Any other variety).—First, G. Bentley, Leeds. Second, E. Holdsworth, Leeds.

Ducks (Aylesbury).—First, J. K. Fowler, Aylesbury. Second, G. Pease, Darlington. Third, J. Grocott, Nantwich. Commended, R. Tate, Driffield.

Ducks (Rouen).—Cup, W. Seddon, Prescot. Second, W. Copple, Prescot. Third, J. Sergentson, Gowry, Kirby-Lonsdale. Third, W. Mitchell, Keighly. Highly Commended, W. Willison, Kendal; R. Tate, Driffield; J. K. Fowler, Aylesbury; R. I. Robinson, Ulverston. Commended, A. Worthington, Bolton-le-Sands.

Ducks (Any other variety).—First, F. W. Earle, Edenhurst, Prescot. Second, G. S. Sainsbury, Rowde, Devizes. Third, G. Pease, Darlington. Highly Commended, Mrs. T. Hodgson, Carnforth.

Pigeons.—*Carriers.*—First, J. Shorthose, Shieldfield Green, Newcastle-on-Tyne. Second, T. Kew, Burton-in-Kendal. Highly Commended, I. Monkhouse, Kendal; D. Thwaites, Rock Ferry, Cheshire. *Almond Tumblers.*—First, W. Cannan, Bradford. Second, A. L. Silvester, Birmingham. *Tumblers* (any other breed).—First, W. Cannan, Bradford. Second, I. Monkhouse, Kendal. Highly Commended, Mrs. A. Monkhouse, Kendal. *Owls.*—First, W. Cannan, Bradford. Second, D. Thwaites, Rock Ferry, Cheshire. Highly Commended, I. Monkhouse, Kendal; D. Thwaites, Rock Ferry, Cheshire; A. L. Silvester, Birmingham; E. Smith, Birmingham. *Powters or Croppers.*—First, E. Brown, Sheffield. Second, T. Hodgson, Carnforth. Highly Commended, D. Thwaites, Rock Ferry, Cheshire. Commended, D. Thwaites, Rock Ferry, Cheshire. *Barbs.*—First, E. A. Hargrove, Birmingham. Second, W. Cannan, Bradford. Higbly Commended, G. Goore, Liverpool; A. L. Silvester, Birmingham. *Fantails.*—First, F. E. Else, Bayswater. Second, J. W. Edge, Aston New Town. Highly Commended, T. Ellrington, Woodmansey, Beverley; G. Goore, Liverpool; H. Yardley, Birmingham. *Turbits.*—First, F. E. Else, Bayswater. Second, E. A. Hargrove, Birmingham. Commended, E. Brown, Sheffield. *Trumpeters.*—First, F. Key, Beverley. Second, D. Thwaites, Rock Ferry, Cheshire. Highly Commended, D. Thwaites, Rock Ferry, Cheshire; E. Smith, Birmingham; W. Cannan, Bradford. *Jacobins.*—First, W. Cannan, Bradford. Second, T. Ellrington, Woodmansey, Beverley. Highly Commended, F. E. Else, Bayswater; J. W. Edge, Aston New Town; E. Brown, Sheffield; W. Cannan, Bradford. Commended, H. Yardley, Birmingham; E. Smith, Birmingham. *Any other variety.*—First, J. Barrow, jun., Kendal (Magpies). Second, A. L. Silvester, Birmingham (Spots). Highly Commended, E. A. Hargrove, Birmingham (Frillbacks); E. Smith, Birmingham (Frillbacks). Commended, E. Smith, Birmingham (Nuns).

Extra Stock.—Highly Commended, J. Hopekirk, St. Catherine, Windermere (Dorkings); J. Hully, jun., Kendal (Brown-red Game Cockerel); G. C. Whitwell, Kendal (White Cochin Pullets, Dorking Pullets, and Dorking Hens). Commended, H. Cragg (Golden-spangled Hamburgh).

LEEDS POULTRY SHOW.

The second annual Exhibition of poultry in connection with the Leeds "Smithfield Club," was held conjointly with the show of fat stock, in the Smithfield Market Place, Leeds, on the 10th and 11th inst., in a commodious, well-lighted, wooden building erected for the purpose. The prize list for poultry was devised on a liberal scale, and a silver cup in addition to the first prize was offered for the best pen of poultry in the Show.

The entries in all numbered 261 pens, and the birds shown were excellent. *Dorkings* of any variety headed the list, and Mr. Jas. Dixon took first prize and silver cup, for the best pen in the Show, with a good pen of Coloured. The *Spanish* were not remarkable, most of the cocks shown had combs inclined to hang over. *Cochin-Chinas* of any colour came next, Mr. T. B. Stead winning with a heavy pen of Partridge. In Black-breasted Red *Game*, Miss Beldon took first prize; and in Whites and Piles Mr. Mason won with a beautiful pen of Whites, considered by many to be the best pen of birds in the Show. In the "variety class" for Game, we should not forget to mention the Duckwings of Mr. Adams, who deservedly took two of the prizes. The *Hamburghs* shown were of particularly good quality especially the Golden-spangled; but several really excellent pens were passed over without notice. The *Polands* we thought nothing particular. The "variety class" brought Malays, Cuckoos, Brahmas, Black Hamburghs, &c. Mr. Tate taking first with a pen of the first-named variety, which were claimed at 30s. In the class for *Guinea Fowls*, Mr. Tate took first, with a pen of Greys; a pair of Whites in the moult coming in third. The *Bantam* classes contained some good birds. The first prize for Game Bantams was gained by Mr. J. Crossland, jun., the (alleged) second-prize pen at Darlington being passed over without notice.

Turkeys, *Geese*, and *Ducks* were well represented. The first-prize pen of Geese were excellent.

The following is the award of prizes :—

Dorkings (any colour).—First, J. Dixon, Bradford. Second, H. Himsworth, Wakefield. Third, T. E. Kell, Wetherby.

Spanish.—First, J. Dixon. Second, E. Smith, Manchester. Third, J. Davis, Highly Commended, T. B. Stead.

Cochin-China.—First, T. E. Stead. Second, E. Smith. Third, J. Dixon. Highly Commended, J. Bell, Thirsk.

Game (Black-breasted and other Reds).—First, Miss E. Beldon, Bradford. Second, H. Adams, Beverley. Third, J. Frith, Halifax. Highly Commended, H. M. Julian, Beverley; T. Dodds, Halifax. Commended, R. Hemingway, Halifax; J. Hodgson, Bowling Old Lane.

Game (White and Piles).—First, H. Mason, Drighlington. Second, H. Adams. Third, J. Crosland, jun., Wakefield. Highly Commended, R. Hemingway, Shelf. Commended, T. Dodds.

Game (any other variety).—First, H. Adams. Second, J. Firth, Halifax. Third, H. Adams. Highly Commended, T. Dodds.

Hamburgh (Gold-pencilled).—First, F. Hardy, Laister Dyke. Second, J. Dixon. Third, F. Hardy. Highly Commended, T. W. Hill, Manchester; H. Pickles, Skipton. Commended, Miss E. Beldon.

Hamburgh (Silver-pencilled).—First, J. Dixon, Bradford. Second, Miss E. Beldon, Bradford. Third, W. Simpson, Dunkeswick.

Hamburgh (Gold-spangled).—First, S. Barrett, Harewood. Second, W. Lawson, Otley. Third, J. Dixon. Highly Commended, Farnhill and Render, Morley; R. Tate, Driffield; T. H. Turner, Fir View, Sheffield; J. Bamforth, Holmfirth.

Hamburgh (Silver-spangled).—First, S. Ashton, Mottram, Cheshire. Second, E. Smith, Middleton, Manchester; H. Pickles, jun., Earby, near Skipton. Highly Commended, J. Riley, Hawkesworth; S. Barrett.

Polands.—First, J. Dixon. Second, Miss E. Beldon. Third, J. Dixon.

Any Farmyard Cross, or other variety, not previously classed.—First, R. Tate. Second, T. M. Brooke, Dewsbury; J. Rinder, Sheepscar. Highly Commended, J. Dixon; T. W. Hill, Heywood, Manchester; G. Newton, Garforth.

Guinea Fowls.—First, R. Tate. Second, J. T. Fenton, Stapleton House. Third, G. Newton.

Bantams (Black).—First, J. E. O. Nussey, Wortley, Leeds. Second, A. Farrar, Bramley; Third, G. Bentley, Kirkstall.

Bantams (White).—First, J. Dixon. Second, F. Hardy, Laister Dyke. Third, J. Crosland, jun., Wakefield.

Bantams (Game).—First, J. Crosland, jun., Wakefield. Second, T. H. Turner, Sheffield. Third, R. Tate, Driffield.

Bantams (any other variety).—First, E. Hutton, Pudsey.

Turkeys.—First, R. Tate. Second, J. Dixon. Third, J. Rudd, Bradford. (The class generally highly commended.)

Geese.—First, R. Tate. Second, J. Dixon. Third, H. Bentley, Oulton. (Class highly commended.)

Ducks (Aylesbury).—First, R. Tate. Second, T. W. Hill, Heywood, Manchester. Third, Farnhill and Render, Morley. Highly Commended, T. W. Hill.

Ducks (Rouen, or any other).—First and Second, J. Dixon. Third, W. Sissons, Preston Hall. Highly Commended, J. Rhodes, Drighlington, and W. Ingham, Armley.

Extra Poultry.—J. Dixon. Second, John Sunderland. Third, E. Beldon.

The Judges were Mr. E. Bond, of Leeds; Mr. Smith, of Halifax; and Mr. J. Hindson, of Liverpool.

CHIPPENHAM POULTRY EXHIBITION.

The annual Exhibition of poultry in connection with the Chippenham Agricultural Society, was held in that town on the 12th and 13th inst., and, without doubt, it was by far the best collection of the feathered tribe ever gathered together in their spacious market-yard, which may be attributed to a better classification of the prize list than on any former occasion.

The first class on the list was the *Dorkings*, and in it were several good pens; but we could not quite see what entitled Mr. Hanks' pen to rank first, as both the cock and one of the hens had deformed feet, and we thought both the second prize and highly commended were larger. In *Spanish*, Mr. Rodbard stood first, and we preferred Mr. Brinkworth's commended to Mr. Heath's second-prize pen, as their faces were much cleaner as well as larger, and they were in far better condition. In *Game* the Black-breasted Reds formed an excellent class, the competition being exceedingly sharp. *Cochins* mustered only three pens, which called for no especial mention. In *Hamburghs*, although there was not a numerous entry, all three varieties represented were good; but, strange to say, there was not a single pen of Silver-spangled. Mr. Keable's Silver-pencilled, and Messrs. Wiltshire and Baily's Gold-spangled well deserved their honours.

In the "variety class," Mr. Heath stood first with a fine pen of Single-comb light *Brahmas*. It is a remarkable fact, but Game *Bantams* were represented by one pen only, and that a very ordinary lot of Duckwings. In the other Bantam class the first prize went to some good Blacks, the second to a pen of White Booted.

Miss Milward's first-prize *Turkeys* were exceedingly good.

The *Geese* also were meritorious.

We have seen the Aylesbury *Ducks* much better; but Rouens made amends, forming an excellent class. This year the Committee acceded to a request made to them, and added a third class for Ducks, which was supported as well as any other in the Show. Mr. Sainsbury taking first with an excellent pen of East Indian, and but for a rule prohibiting any exhibitor taking both prizes in a class, we have little doubt he would have taken second also, consequently it went to a pen of White Calls.

The *Game Cock* sweepstakes was well contested, the first prize going to a smart bird of Mr. Lamb's, while the whole class was pronounced by the Judge to be very superior.

DORKINGS—First, Miss Hanks, Malmesbury. Second, Miss Milward, Newton St. Loe. Highly Commended, T. Keable, Lambourne.

SPANISH.—First, J. R. Rodbard, Aldwick Court. Second, A. Heath, Calne. Commended, O. Brinkworth, Calne.

GAME (Black-breasted and other Reds.)—First, G. Hanks, Malmesbury. Second, Hon. G. Howard, Charlton. Third, — Elling, Sutton Parva. Highly Commended, R. Stratton, Brinkworth. Commended, — Wentworth, Beckhampton; — Lamb, Highworth.

GAME any other variety).—First, W. Bleadon, Calne. Second, — Elling, Sutton Parva. Highly Commended, F. Baily, Calne.

COCHIN-CHINA (any variety).—First, A. Heath, Calne. Second, G. Hanks, Malmesbury.

HAMBURGHS (Gold-pencilled).—First, E. Phillips, Chippenham. Second, J. Orlidge, Chippenham. Commended, E. Phillips, Chippenham.

HAMBURGHS (Silver-pencilled).—First, Miss Keable, Lambourne. Second, W. Bennett, Cromhall. Third, T. Keable, Lambourne.

HAMBURGHS (Gold-spangled).—First, L. Wiltshire, Calne. Second, F. Baily, Calne.

ANY OTHER DISTINCT OR CROSS-BREED.—First, A. Heath, Calne. Second, T. Smith, Westbury. Third, Miss Milward, Newton St. Loe.

BANTAMS (Game).—Prize, A. Heath, Calne.

BANTAMS (any other variety).—First, R. Brotherhood, jun., Chippenham. Second, H. Cox, Chippenham.

TURKEYS.—First, Miss Millward, Newton St. Loe. Second, E. P. Sly, Westbury.

GEESE.—First, R. P. Rich, Chippenham. Second, G. Hanks, Malmesbury. Commended, Mrs. Bridges, Dauntsey.

DUCKS (Aylesbury).—First, T. Smith, Westbury. Second, G. Hanks, Malmesbury. Commended, J. W. Brown, Uffcott.

DUCKS (Rouen).—First, T. R. Hulbert, Badgenton. Second, Hon. G. Howard, Charlton Park.

DUCKS (any other variety).—First, G. S. Sainsbury, Rowde. Second, P. Awdry, Chippenham. Highly Commended, G. S. Sainsbury, Rowde Commended, G. S. Sainsbury, Rowde.

SWEEPSTAKES FOR THE BEST GAME COCK.—Prize, — Lamb, Highworth. (A very superior class of birds.)

EXTRA CLASS.—Bounties were given to Mr. Elling, Sutton Parva; Mr. W. Awdry, Chippenham; Miss Milward, Newton St. Loe.

The Judge was G. J. Andrews, Esq., of Dorchester.

THE SALES OF POULTRY AT THE LATE BINGLEY HALL SHOW.

WE have extracted the following particulars from the return of sales at the late Exhibition, in the hope of their being found interesting to the large class of persons whose tastes or pursuits lead them to keep an eye on quotations of the live bird market. The four days' transactions at Bingley Hall, were as follows:—

	No. of pens sold.	Amount realised. £	s.	d.	Average price per pen. £	s.	d.
Monday	115	479	14	0	4	3	6
Tuesday	38	123	0	6	3	5	0
Wednesday	12	42	9	0	3	10	0
Thursday	21	59	17	6	2	17	6
Total	186	705	1	0	3	15	0

It will be observed, from these figures, that the first day is the one on which operations are most numerous, as well as greatly the most productive. This is probably due in some measure to the class of attendance on that day, though it may be partly ascribed to the desire of amateurs to purchase at the first moment birds which they are specially desirous of obtaining. [illegible] shows that buyers should be early in the market if they wish [illegible] satisfy a particular taste. The highest price realised [illegible] [illegible]15, for the first-prize pen of Spanish chickens. Next [illegible] [illegible]12 12s., given for the cup pen of Black-breasted Red Ga[illegible] [illegible]rds. £12, the highest amount of next degree, went for the [illegible] Buff Cochin chickens. Four amounts of ten guineas [illegible] Dorkings; Mr. Dawson's pen of Game fowl (No. 819) which obtained neither prize nor commendation; first-prize Golden Pheasants; and first-prize Silver-spangled Hamburgh chickens. The first-prize Buff Cochin chickens formed the only pen which realised exactly £10. Six pens fetched from £8 8s. to £8 10s. They were the second-prize Dorking hens, first-prize Dorking pullets, first-prize Game Bantams, first-prize White Aylesbury Ducks, commended Dorking pullets, and highly commended Coloured Dorking chickens. Prices of £7 and £7 10s. each were realised by the three pens of first-prize Silver-spangled Hamburghs, third prize ditto, and first-prize Polish Single cock. Sums ranging from £6 to £6 10s. are returned for eight pens — namely, first-prize Game Bantams (Black-breasted), commended White Cochin chickens, commended Black-breasted Game Single cock, second-prize White Aylesbury Ducks, two pens of highly commended Coloured Dorking chickens, first-prize Brown Game chickens, and second-prize Dorking pullets. These are all the particulars that need be quoted by way of illustrating the highest range of prices. The following is a summary of the number of pens sold at each rate of quotation:—

	Price. £	s.	d.		£	s.	d.	No. of Pens sold.
From	12	0	0	to	15	0	0	3
"	10	0	0	"	10	10	0	5
"	8	8	0	"	8	10	0	7
"	7	0	0	"	7	10	0	3
"	6	0	0	"	6	10	0	8
"	5	0	0	"	5	5	0	23
"	4	0	0	"	4	10	0	20
"	3	0	0	"	3	10	0	46
"	2	0	0	"	2	10	0	41
"	1	0	0	"	1	17	6	30
Total pens sold								186

Persons desirous of purchasing true-bred fowls at reasonable prices seem, from this statement, to have every prospect of meeting with success at the Bingley Hall collection, for it will be observed that only 41 pens out of 186 were sold for so much as £5 each.

The following is a statement of the number of pens sold and amount realised in each class of the Exhibition:—

	No. of Pens sold.	Amount Realised £	s.	d.		No. of Pens sold.	Amount Realised. £	s.	d.
Dorkings	59	211	19	0	Swans	1	2	0	0
Cochins	16	68	17	0	Geese	8	35	1	0
Game	32	118	18	6	Ducks	14	54	4	6
Hamburghs	25	98	15	6	Turkeys	4	17	8	0
Brahma Pootra	4	10	5	0	Pheasants	2	12	0	0
Polish	3	12	14	0	Pigeons	4	13	5	0
Spanish	4	25	19	0	Single cocks	27	87	8	6
Bantams	11	39	18	0					

The Dorkings here take a decisive lead, as it is the opinion of many practical judges that they ought to do, since they seem on the whole the best adapted of all classes to meet the several uses for which poultry is kept. The Spanish breed carried away the highest price given for a single pen, though the amounts of next degree were pretty equally scattered among the various divisions.

Comparing the sales with the prize awards, we find the results to be as follows:—

Number of prize pens sold	58
Number of commended ditto	43
Other pens	85
Total	186

—(*Birmingham Times.*)

QUANTITY OF FOOD FOWLS REQUIRE.

WILL you inform me how long a bushel of barley and a peck of barleymeal, with a grass run of about three acres, ought to last twenty fowls, so as to feed them well, but not so well as to make them too fat to be good layers? The sorts are Dorking and half-bred Dorkings, and Cochins.—AN AMATEUR BEGINNER.

[Our answer cannot be specific, it must be a general one. Fowls do not always eat the same quantity. They vary according to weather, season, condition, and previous feeding. In frost they eat more, as the surface of the earth produces nothing. In the summer, herbage helps them very much; and when they have always been well fed, they consume less than when they have been kept on short commons.

The expense of keeping fowls is caused by waste, and whenever any food is seen on the ground there is waste. Fowls should be fed by hand and food should be given only so long as [illegible] thrown away.]

BANTAM CLASSES AT THE CRYSTAL PALACE POULTRY SHOW.

WILL Mr. Houghton forgive me for suggesting that the Game Bantam classes at the Crystal Palace Show be in future divided into "Black-breasted and other Reds," and "Duckwings and any other colour?" On reference to the catalogue of the Show held December 11th, it will be seen that in this class there were twenty-three entries, whilst in the two classes, "Black," and "White," there were but thirteen altogether, and in the Gold and Silver Sebright classes but twenty-one. It is true there were three prizes in the Game Bantam class, and two only in the others; but I feel sure it would be more satisfactory to exhibitors if the colours were divided in some such way as suggested, and the prizes made like those in other classes. Mr. Houghton has shown every disposition to meet the wishes of exhibitors, and I think he will consider what I have stated worth consideration before preparing his next schedule.—P.

HONEY AND CHEMISTRY.

ALLUSION has been made by some of your correspondents, and, I think, among them, "A DEVONSHIRE BEE-KEEPER," to some supposed chemical change effected by the bees in their food, whether collected from flowers or artificially supplied, and which has led to a remark in "A RENFREWSHIRE BEE-KEEPER'S" last letter, who evidently disbelieves is anything of the kind, and in which I am inclined to join him. The short time in which the secretion from flowers, or the substitutes for it, are retained in the honey-bags of the bees, precludes the possibility of any change being made at the time of collection, and there is no proof that any subsequent alteration takes place, except what may be accounted for in another way. Dr. Bevan remarks (page 263), "In the 'Philosophical Transactions' for 1792, Mr. Hunter stated, that whatever time the contents of the honey-bags may be retained, they still remain pure and unaltered by the digestive process. Mr. Polhill is also of this opinion. Messrs. Kirby & Spence think that as the nectar of flowers is not of so hick a consistence as honey, it must undergo some change in he stomach of the bee." So also argues the redoubtable Huish. 'But," continues Dr. Bevan, "the naturalists just named are ot borne out either by my own experiments or those of my piarian correspondents. We have each tried supplying bees ith syrup of sugar as a resource for winter, without finding ny material change after it was stored." This, also, is my exerience; and if honey is a chemical or elaborated substance, hy is it not always alike? The whole mystery is, I think, olved by atmospheric influence acting upon an original sacchaine, at first very fluid, but hardening and thickening in an ltered temperature, like any other conserve or syrup natural or rtificial. This was the opinion of Dr. W. Dunbar, no supericial observer, who says, that the conclusions of Kirby & Spence ere not confirmed by any experiments of their own.

It is with fear and trembling I approach another subject on hich "A RENFREWSHIRE BEE-KEEPER" appears to be very ensitive—viz, as to the common results of "super-posing." It s very likely he may be right under certain circumstances as o peculiarity of hive, &c.; but the more general rule, so far as have seen and read such authors as Bevan, Dunbar, and olding, is in favour of the theory that bees prefer to breed in he lower portion of a hive, and carry their store into that part he farthest from the entrance, frequently partially removing it ownwards subsequently. In other words, the lowest is the tock in common cases, for as Dr. Bevan says, "the queen is enerally more disposed to descend than to ascend." It is well t should be so, as otherwise the distance from a supply of pure ir might cause an increase of damp, leading to disease, and specially dysentery, under the confinement of winter, as I know o my cost. Indeed this would seem to have been the case with our correspondent, who found that his "little favourites, sore ressed by long confinement during frost, converted the lower ompartment to a necessitous purpose."—A. B.

BEES AND THE ART OF QUEEN-MAKING.

(*Continued from page* 206.)

In the former article on this subject we noticed divers very bvious errors, which induced us to question whether the Rev. rincipal Leitch had brought his whole powers of observation to bear on apiarian subjects, and adduced one or two circumstances which made us doubt whether his theory of a special temperature, however plausible it might appear, could be accepted as the true solution of one of the most extraordinary of Nature's mysteries, without at any rate better evidence than its author has yet set before us.

We may perhaps admit for the sake of argument, that Dr. Leitch's thermometrical experiments establish the fact of an increased temperature attending the rearing of queens, whether bred in the usual manner or raised from eggs or young larvæ, which would otherwise have attained no higher stage of development than that of ordinary working bees: but having granted all this, the question still remains, as we have before hinted, whether the Rev. Principal may not have mistaken effect for cause. Violent muscular exertion is, as we all know, attended by a remarkable increase of animal heat. Friction is also capable of producing an extreme temperature, whilst the sudden compression of atmospheric air will liberate a sufficient amount of caloric to set fire to any readily inflammable substance. Now it appears to us that it would be almost as preposterous to argue that the heat evolved by these various processes was the cause of the processes themselves, as to determine, without much more conclusive evidence than has yet been produced, that the special temperature which is asserted to attend the operation of queen-raising is "the cause," or even "one of the causes which accounts for this the greatest marvel of insect life."

Our own impression is, that the immortal Huber was most probably correct in assigning, as the cause of this wonderful transformation, the quality as well as the quantity of food with which the royal larva is supplied. To this hypothesis Dr. Leitch objects that it has by no means been conclusively proved, either by chemical analysis or by any other means, that the so-called royal jelly differs in any respect from the ordinary food supplied to worker larvæ. Whilst freely admitting that this difference may reasonably be held to be open to a doubt, we avow our own conviction founded on almost innumerable opportunities for observation, that it nevertheless exists, whilst it is beyond all question that the quantity of food supplied to an intended queen is greatly in excess of that required for the development of a working bee. This excess is so palpable, that it is frequently possible to determine within a very few hours after the loss of a queen, and before any elongation of the cells has taken place, which of those among the young larvæ have been selected as candidates for the sovereignty of the hive, by simply observing the extraordinary quantity of food which has been furnished to the favoured few.

We now come to a circumstance which appears to us so conclusive as to the fact of the food with which it is supplied being the true cause of this marvellous transformation of a worker larva into a queen bee, that we fancy, if it had come under the notice of the Rev. Principal, it would have prevented his promulgating a theory which we believe to be altogether erroneous. The fact to which we allude to is, the power which apiarians possess of superseding the functions of the somewhat mythical "council of state," which Dr. Leitch imagines to assemble soon after the discovery of the loss of a queen, the points of whose deliberations are "what plebeian offspring are to be selected, and how many queens are to be reared?" The first hint which we have met with of the apiarian being himself able to exercise a right of choice in this matter, occurs in M. Hermann's little book, in which we find it stated, that "if a piece of about an inch square is cut off, crossways, from below the edge of a young brood-comb full of grub eggs, so that the liquid of the brood runs out, it generally causes the bees to fix their queen cells on that spot in the best order." A much more definite statement than the above, is, however, copied by Mr. Langstroth, from the German *Bienenzeitung*, or Bee-Journal, and is from the pen of the Rev. Mr. Kleine, one of the ablest German apiarians:—"Dzierzon recently intimated, that as Huber by introducing some royal jelly into cells containing worker-brood obtained queens, it may be possible to induce bees to construct royal cells where the apiarian prefers to have them, by inserting a small portion of royal jelly in cells containing worker larvæ! If left to themselves, the bees often so crowd their royal cells together that it is difficult to remove one without fatally injuring the others; as, when such a cell is cut into, the destruction and removal of the larva usually follows. To prevent such losses, I usually proceed as follows:—When I have selected a comb with unsealed brood for rearing queens, I shake or brush off the bees and trim off, if necessary, the empty cells at its margin. I then take an unsealed royal cell—which usually contains an excess of royal jelly—and remove from it a portion of the jelly, on the point of a knife or pen, and by placing it on the inner margin of any worker-cells, feel confident that the larvæ in them will be reared as queens; and as these royal cells are separate, and on the margin of the comb, they can be easily and safely removed. This is another important advance in practical bee-culture, for which we are indebted to the sagacity of Dzierzon."

The foregoing fact appears to us sufficiently conclusive as to the truth of Huber's theory regarding the influence of food in producing the astonishing development of a worker larva into a queen bee, and after giving the whole subject our best consideration, we feel warranted in pronouncing the special temperature theory of the Rev. Principal Leitch to be "Not proven."—A Devonshire Bee-keeper.

HOW I BECAME AN OXFORDSHIRE BEE-KEEPER.

(*Continued from page* 60.)

June 14th.—Hived a swarm for Mr. M., and, on my return, I found my old original, age 6, was swarming in a strong east wind so much appreciated by Mr. Kingsley. They had most of them gone over to the park; and, I suppose, my well-known voice had sufficient inducement to win them back again—at any rate they came and settled in the *toujour* peas. It was the largest single swarm I ever saw. In the evening, I united them to the swarm and two casts of the previous day; a good join, no fighting, and no queen to be seen dead upon the cloth in the morning, upon which account I watched the hive narrowly all day, thinking, perhaps, that if the queen was still alive, she might prove the means of enticing away her subjects again; but no, all remained, so they performed her funeral rites with silent obsequy, beyond my ken. The hive was so full that I was induced to add a Payne's straw super at once, which they took to, and began working in immediately, though the consequence was, as I never had the circumstance happen before in any of my supers, some bee-bread and brood in the central comb.

15th.—A colt issued at half-past four P.M., from age 3, which was rather too much of a good thing. I did not arrive soon enough to pounce upon the queen as she appeared upon the alighting-lip, but they settled in the peas, and there, after a good hunt and much disturbation, I caught her, and the colt went home. Picked up two dead queens, and two partly alive, crawling languidly on the ground opposite, cast out from age 2, by which I augured that they did not intend to throw a colt, and I was right.

17th.—The colt issued again from age 3, and I caught the queen as she came out riding in state on the back of a drone. The bees settled for a short time in a row of potatoes, but they soon came straight to their ancient cells again.

18th.—Once more the colt from age 3, and I secured her majesty as she made her exit; her cavaliers went to the potatoes and then came back again, very angry. Put one of my new breakfast glass supers to this year's colony of the 5th inst., as the hive was becoming very heavy, and I have the glass and its contents by me now; it is one of the most perfect specimens of honeycomb.

19th.—The colt again! Caught the queen, and pressed her too severely between my finger and thumb, or otherwise she did not fancy my retaining her in that cribbed and confined position, for she began to use her sting in a most unmistakeable manner, when upon the principle of handling hot iron, I immediately relaxed my grip and away she went; and there comes another, which I also caught, and halloed for a dessert finger-glass to confine her under, when, lo another! which I caught and placed with her, and two bull-dogs could not have set upon each other more fiercely. The colt settled in the peas where I broke in to find the derelict queen, which I succeeded in doing and put her also under the glass where the others were still fighting, and a three-cornered duel at once commenced, which ended in the death of all three. I can only compare their fighting to what every Englishman's would be, if our shores were now to become invaded, to put a stop to our progress and our prosperity. Why, every man of us would fight like queen bees—wild beasts! Well, the colt returned again to their home after the loss of their queens, and thus ended its eventful history. A playful attempt at swarming was made by a cast from age 1, and it came to nothing; but the clarious blare was there in the evening.

20th.—The cast issued from age 1, they settled in the peas from whence I hived them into an old Payne's, which I call my church-and-state hive; and thereby hangs a tale. The first glass super I ever used, a large concave-sided bell-glass was placed upon it, and the bees worked straight upwards, from the hive to its top, a narrow piece of comb, and then formed two extended limbs, right and left, in representation of a cross. They then added four opposing combs or branches on to the upright limb of the cross, in as just an imitation of a crown that it is possible to conceive in honeycomb. Then they worked intermediate combs; and, when the glass was filled, it still maintained the appearance of a crown, with eight branches in lieu of four; that is why I call it my church-and-state hive and I said, *Esto perpetua!* so I keep that hive by me, and always shall. I thought to unite the above cast to my first new colonised skip in the evening, but it was so full of honey, and its inhabitants were so populous, and working so well in their super, that I thought it advisable not to interrupt them, but to wait for the cast expected from age 6, add that to my church-and-state and let the two casts amuse themselves till the beginning of September, when, I shall cut away their combs entirely in the middle of the day, and unite the bees in the evening to age 1, which is a hive (two swarms and two casts) that I united and purchased last year, from a parishioner, in order to institute in my apiary four stocks in lieu of three, which I formerly wrote was my permanent number. Now, neither those bees nor their ancestors have ever been crossed, but bred in-and-in for years in the cottager's garden, and I find their working powers are by no means equal to my stock, which I always cross by uniting to them a cast or a colt of strangers; new blood from a distant apiary: therefore, the cast from my old hive will just effect this purpose, and, I have no doubt, I shall be able to report of renewed vigour from age 1, another year.

The dead queen which I forwarded to you for your inspection, was the only catastrophe that happened in uniting the above casts, and I mention it for the satisfaction of "Investigator"—these two casts will yield me, as far as I can judge from the weight of the hive at present, nearly 20 lbs. of run honey at the time mentioned above. Found two dead queens cast out from age 1, and no colt revolves from them.—Upwards & Onwards.

(*To be continued.*)

OUR LETTER BOX.

Spur of Dorking Cockerel (*Nunquam dormio*).—It is not an uncommon thing for the spur to be on the outside of the leg. We do not mean to say that we do not prefer that the spur should be in its proper place; but the deviation is only a disadvantage and not a disqualification.

Tail of Golden-pencilled Hamburgh Cock (*J. Lindsay*).—The tail should be black, but the edges of the sickle-feathers bronzed.

Silver Grey Dorkings (*W. E. E.*).—We can only pronounce on what we have seen, and without the least hesitation we say the feather sent to us would be quite sufficient to disqualify a pen in competition, and cannot, therefore, belong to a Silver Grey. It may be difficult to get the black breast and tail; but they are essentially necessary in the formation of a Silver Grey Dorking. The pens at Birmingham demonstrated the difficulty, but that does not justify any one calling coloured Dorkings Silver Greys. There is no excuse for it, because the rejected on account of colour can enter freely into the classes where the competition is unrestricted, and they are as valuable for one as the other.

Preparing Fowls for Exhibition (*A Subscriber*).—You must state what breed of fowls you keep, as all do not require the same treatment, some show for plumage, some for symmetry; in some bright colour, in others laced feathers are wanted. All birds do well on ground oats mixed with water. None do well if they are fattened. A fattened fowl is only fit for killing. Spanish fowls do better in confinement a few days before exhibiting; but as a rule fowls do better at liberty. In those breeds, however, that are judged by feather it is not always advisable to let them run in dirty weather.

Canary Invermined (*Inquirer*).—The "always ruffling its feathers and gaping, besides fluttering its wings and constantly dressing its feathers," is strong evidence that the bird has more company than it desires. There are two kinds of parasites—one infests the birds, the other the cages. Use powdered sulphur in either case among the bird's feathers, moisten the cracks of the cage with linseed oil, and fill them with powdered sulphur.—B. P.

Ligurian Queens (*J. L.*).—There is now no means of obtaining Ligurian queens, which, after all, are of very uncertain value. One of the best practical apiarians we are acquainted with failed with three queens out of four, which he obtained during the last and preceding seasons.

Bees Deserting Hives (*A Subscriber*).—Whoever told you that the bees would leave their hives to live on the adjoining common either was hoaxing you or knew nothing of the subject.

Skins of Birds (*C. H., Uxbridge*).—Buy the "Taxidermist's Manual," it contains all the information you seek for.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	DEC. 31, 1861—JAN. 6, 1862.	Weather near London in 1860. Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
31	Tu	Justicia speciosa.	29.623—29.309	48—34	S.E.	·26	9 af 8	58 af 4	sets	●	3 23	365
1	W	Circumcision.	29.691—29.122	44—24	N.W.	—	8 8	0 4	24 a. 5	1	3 52	1
2	Th	Andersonia sprengelioides.	30.122—29.948	33—18	N.E.	—	8 8	0 4	44 6	2	4 20	2
3	F	Tree Carnation.	30.254—30.177	31—12	N.E.	—	8 8	1 4	3 8	3	4 48	3
4	S	Camellias.	30.138—30.009	37—26	E.	—	8 8	2 4	19 9	4	5 16	4
5	Sun	2 Sunday after Christmas.	30.037—29.994	34—13	E.	—	8 8	4 4	31 10	5	5 43	5
6	M	Epiphany. Twelfth day.	30.069—30.013	32—14	N.	—	7 8	5 4	42 11	6	6 9	6

Meteorology of the Week.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 44.1° and 31.4° respectively. The greatest heat, 57°, occurred on the 3rd in 1860; and the lowest cold, 4°, on the 2nd in 1854. During the period 143 days were fine, and on 95 rain fell.

THE CLOSE OF THE YEAR.

THE last of anything that has borne to us a measure of enjoyment has about it a tone of melancholy, and holds up a monitory finger. That tone and that finger seem especially conspicuous in the announcement—This is the last day of the year.

Every journey has its stages—its periods for pause and reflection—and among the stages of Life's journey none is more apt for pause and for thought than the day at which we have now arrived—there is a shadow upon the day, and the dying year holds up the warning finger. Its days are irrevocable, have they left us wiser, better, happier? For what have we journeyed through them—what has been our prime object? There is but one true reply to that query—happiness. Happiness is the object all strive to attain, and the object is natural—praiseworthy.

The only restriction—but a momentous one—is that the happiness we covet is not to be like the Apples of Sodom, "fair to look upon, sweet to the taste, deadly when partaken of."

Go and study Paton's wonderfully beautiful picture, "The Pursuit of Pleasure," and seek to find if one of the pursuers there pourtrayed is typical of self. The strivers for honours, for literary fame, for military glory—the sensualist, the drunkard, the miser, are all to be seen there pressing forward to catch and to retain that form of bewitching smiles which floats along, alluring them onwards yet always eluding their grasp—she is never secured by one such as is in that throng.

Yet some there are who do catch Happiness and retain her, and we saw one not long since. Where? "In our mind's eye," and we will trace his outline.

He is a gardener, his family are around him, his income moderate, his love of literature and scientific attainments great, his well-acquired fame widely acknowledged, his friends many, his liberality free, his temper placid, his Christianity practical—he sees God in everything. That man has caught Happiness, and retains her; for she will dwell only with those who strive to have her, not for time, but for eternity.

Once, when talking to that gardener, we spoke in commendation of a divinity author whose work was on his book-shelf, and the concurring assent closed with—"But the best book needs no comments but those which a man may gather from his garden."

That gardener has travelled in many lands—has visited all parts of the British islands—and he coincides with us in thinking that a love of gardening indicates that with it the better part of our nature prevails. "You have heard of the Rev. Henry Ward Beecher." said this gardener, "and I will read you his testimony on this fact—

"SURROUNDINGS INDICATE CHARACTER.

"In the early days, when travelling in the West, it was a matter of some importance and experience to select wisely where I would put up. However, I always looked for flowers, and was seldom misled; for a patch of flowers came to signify kind people, clean beds, and good bread. We all are judged by our surroundings—by appearances. True they are sometimes deceitful, but not always—very rarely so to the man or woman who has been educated to read the heart by the countenance, or calculate the calibre of the brain by the adjuncts of the person—by the *tout ensemble* of the individual. It is not difficult to distinguish the poor rich man from the rich poor man. The manner of discernment is hardly definable. We do it instinctively. The noble mind, the cultivated evergreen heart, is patented—it cannot be counterfeited. We meet men every day whose outline, movements, unconscious expressions, indicate them to be living hypocrites. They are gilt in society and would pass for gold with the new coin, but are detected, and silently and emphatically thrust aside.

"And sometimes this class cultivate flowers—because other people do—because it is fashionable—because the world looks for the beautiful where virtue and wisdom are. But how transparent is this screen to the eye of the really cultivated! The character of the flowers or their arrangement betrays the art and cultivation of their owner. There is no refinement manifest. The abstractly beautiful may be there, but the hand of refinement has not set it in the gold of association. Colours, gaudy and repulsive isolated, are not blended and modified and made beautiful by association with others. The whole picture is a daub—so the educated florist calls it. There must be educated artists in this department of art, as in that lower department, requiring the mixing and arrangement of colours on canvass. And not only must the head be educated, but, first of all, the heart must be taught to respond promptly, sympathisingly, and naturally to the motive of the Creator of the object which it is the office of the artist to study.

"Then it is not so difficult to judge of the character and habits of a family by the single Vine trained at the doorway, or the single plant, transplanted to a wooden box on the door-stone from the prairie or woodland. Whatever it may be, it will in some undefinable way reflect the character of the person who planted it."

Let some of the ladies of Woodstock read that, and learn from it not to discourage flower gardening among their poorer neighbours. He who in the country does not love flowers and their culture is poor though rich; whilst he who does love them is rich, though he may be poor.

When we conversed with our Nestor gardener at the close of last year, he showed us his diary of what were most worthy of note in the gardening occurrences of the preceding twelve months, and as it is a practice worthy of imitation we will adopt it in the brief space left us to occupy.

The days can never recur in which discoveries revolutionising gardening will be made. We have attained to that elevation of excellence which enables us to cultivate in any given latitude the plants of any other latitude; we can have any flowers, and fruits, and vegetables we covet at any season, however unnatural—we have "Peas in December, ice in June." So we must be content now-a-days with having nothing to jot down as composing the year's harvest of novelties, except a few disconnected fragments.

Foremost in the boons to gardening was the opening of the new Garden in June of the Royal Horticultural Society—an evidence and a pledge of better benefits to be derived by our art from that Institution.

There were introduced but one new Apple worthy of commendation—Twining's Pippin, a good late dessert fruit; two new Pears—the British Queen and Stevenstone, hardy, richly flavoured, and abundant bearers; thirteen Grapes—Burchardt's Prince, Champion Hamburgh Muscat, Chavoush, Early Muscat, Gros Colmar, Gros Maroc, Gros Panse, Ingram's Hardy Prolific Muscat, Morocco Prince, Muscat Noir d'Angers, Muscat Troveren, Smith's Sweetwater, and Stillward's Sweetwater.

Two new Nectarines, both raised by Mr. Rivers—the Pine Apple and the Victoria. The latter is a cross between the Violette Hâtive and Stanwick. It does not crack like the latter, is equally delicious, and, as has been well observed, it is "worthily named, for, like our Queen, it has not its equal."

Two new Peaches, also raised by Mr. Rivers—Early Albert and Early Victoria, "without doubt the best of all the early Peaches."

Two new Pine Apples—the Hurst House, or Fairie's Queen, and the Stoneleigh Abbey—the first dwarf and freely fruiting, and the second also excellent, and sustained by a first-class certificate of the Royal Horticultural Society's Fruit Committee, as well as by an award of one of Mr. Dilke's prizes.

Three new Strawberries—Eclipse, an excellent early forcer; La Constante, late, and a great bearer; and Marguerite, richly flavoured, and very large.

Of culinary vegetables we have Dalmeny Sprouts, differing from the Brussels in its sprouts being really small Cabbages; Fearnought, a Cabbage which was uninjured last winter in places where all others were killed; and Parsnip Chervil, which is really nothing more than the root of Chærophyllum bulbosum, ranking "with Oxalis crenata, and other such failures, which have from time to time been introduced as 'substitutes' for the Potato."

We can only give the aggregates of the new flowers which have been introduced—namely, of Auriculas, 9; Antirrhinums, 21; Azaleas, 9; Calceolarias, 10; Chrysanthemums, 26; Cinerarias, 20; Dahlias, 26; Fuchsias, 6; Geraniums, bedding, 17; Gladioli, 26; Gloxinias, 4; Hollyhocks, 29; Pansies, 57; Pelargoniums, 21; Pentstemons, 12; Petunias, 5; Phloxes, 19; Picotees, 8; Pinks, 13; Roses, 37; and Verbenas, 7. Of new plants were introduced 271.*

Having thus enumerated our gains during the past year, let us as briefly cast up the losses we have endured during its days.

In the first month of the year we lost Mr. Beck, the well-known raiser of Pelargoniums, and author of "A Packet of Seeds saved by an Old Gardener." In May died Professor Henslow, in whom botany lost a skilled master, and, all who knew him, a kind, indefatigable, and trusty friend. July saw Professor Tenore, a still more widely-known botanist, consigned to the grave; and the closing month of the year has taken from us the Prince Consort. On this last loss we need not enlarge, for the universal sorrow we have so recently witnessed tells how every native of our islands estimates the consequences of the death of that admirable man, and acknowledges the good which he had originated and maintained. But our noble Queen—noble even in the demonstrations of her love for him taken from her—tells in the following letter how she proposes to foster his memory, and to strive to mitigate the loss which his death occasions to her subjects. The letter is from Sir C. B. Phipps, and was read at a meeting of the Council of the Royal Horticultural Society specially summoned on Friday. The letter was addressed to Mr. Wentworth Dilke, one of the Vice-Presidents:—

"*Osborne, Dec.* 24, 1861.

"MY DEAR DILKE,—The Queen has directed me to inform you that it is Her Majesty's wish that the Horticultural Gardens should be considered as under her peculiar and personal patronage and protection.

The only consolation that Her Majesty can hope to find, for [illegible] of her life, under her bitter and hopeless bereavement, is to endeavour to carry out the wishes and intentions of her beloved husband.

"The Queen well knows the deep interest that he took in this undertaking, and would wish to have periodical reports sent to Her Majesty of the progress and proceedings of the Society.—Sincerely yours, "C. B. PHIPPS."

Before we again address our readers a new year will have commenced, and heartily do we wish that to every one of them it may be one of many blessings, much instruction, and few sorrows.

"Our worthy friends!—a gude new year
To you, an' a' your hearts haud dear
At hame or far awa!
Though Fortune scrimpet favours yield,
Hale be your hearts, at hame, a-field;
Nor ever lack a cozie bield,
Frae a' the storms that blaw."

PREPARATORY TREATMENT OF PLANTS FOR CROSS-BREEDING.

THERE is no process of the gardener's art which is better understood by the amateur than that of crossing flowers. Yet, there is not another operation to which a gardener can turn his hand to, about which the great bulk of us gardeners know less of the essentials for success. If I had ten kinds of plants on my list for experiments in crossing next season which I never crossed before, I could hardly find ten men amongst all my acquaintances of whom I could ask advice about the ways I ought to go to work with them; and yet I venture to say, there are not ten men in the country who had ever crossed a flower who would not answer my question without the smallest hesitation. The mere act of crossing flowers is, indeed, the most simple practice in gardening, except pulling up a Groundsel, and then throwing it down where it grew. Simple as these two things are, however, the one of them is yet a problem to be proved, the other a very foolish act.

Who can show me, or prove to himself, the right way to cross Mangles' Variegated Geranium? Say, the best way, as if you were asking an editor. But I do not want to know the best way—perhaps the best way would not suit my conveniences for keeping and growing the plants; but if I knew the right way of growing the Geraniums for crossing, I would try to adopt it, although I might not be able to practise any but the second or third best way.

Talk about crossing being a simple thing, why to practise it intelligently is at this moment the most difficult question which practical science has to deal with. The work or process of putting a little dust on a given point, which is all that is done in crossing a flower, is simple, as they say; but the art by which the cross-breeder has to prepare his subjects for that very simple operation is just as difficult and as little known as anything under the sun.

The probability is, that every cross-breeder has an art of his own, which he never divulges for fear of being laughed at, or in order that no one else can run the race before him. I have an artful art in the preparation of all my breeders which no one knows but myself. But that is not here or there. The question is about the grand secret and how to get at it—how to prepare Mangles' Variegated Geranium, which is all but a botanical mule, and a barren plant in the hands of most people; but it has certainly seeded, and we had the account lately of its having been crossed by the pollen from the shorter stamens of the Golden Chain, by Mr. Smith of York; and the question now is, Did Mr. Smith induce this cross by some previous mode of management which was different from the usual run, or was it merely the effect of an accidental circumstance?

My own experience would lead me to believe there is no such thing as an accidental circumstance to cause a plant that is generally barren to bear seeds, whether it was crossed or not. Some plants are most difficult to cross or to hybridise, and temperature seems a main element in the success when they do unite with their fellows, as in cross-breeding, or with very different fellows, as in hybridising one species with another of a different cast and constitution. This is proved when they get plants to cross on the Continent which we cannot manage to cross or even seed here. Here, then, is the first proof before us of an element, or an elementary process, to induce a plant to cross or to bear seeds.

Then, the next question is this, Is temperature alone—that is, a higher temperature, the only means within our reach to cause certain plants to seed or cross, and is that temperature all that is necessary? Well, it certainly may be all that is required to get the plants to seed, but how about the seedlings? My opinion is, that there is a great deal more importance in the proper soil, and the kind of treatment the plant receives for the previous twelve months before crossing than in temperature. Then, if you could give that soil and that treatment to your plants for twelve months, or twice that number of months in a much better climate, so to describe it, than that of England, my belief is that your seedlings would exceed in value any that could be had in the unassisted climate of England under the best management.

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* For full particulars concerning all the fruits, flowers, vegetables, and plants, we recommend our readers to consult "The Gardeners' Year-Book," from which these details are abstracted.

We are all but unanimous that the higher temperature on the continent in summer favours the breeders there, as against our seedlings of the same kinds; and we may rest assured if that be so, that the fact does not stand alone. Other things, we do know, help our processes quite as much as temperature; and why not in this also?

The age and the condition of the mother parent at the time of crossing is, assuredly, of high consideration to the cross-breeder, and I think also to the hybridiser; but of him I am not quite so certain, as for some years past I have done very little at hybridising, although I first began crossing and continued at that branch of it alone for many years. But to this day I am all but at a loss as to the extent of the value of the condition of the male parent at that precise moment. I know to a certainty, however, that if I wanted to have an intermediate cross between a very strong mother—say Defiance Scarlet Geranium and by the pollen of such as Mangles' Variegated if it had pollen, I should need to prepare Defiance by reducing it through ill treatment to a mere scrub or skeleton during the previous season of growth, and to keep it down to that point during the winter and spring following up to the time of flowering for the cross, and the opposite treatment to be given to the weak male, say by taking a two-year-old plant of it in early spring, and with the best compost and treatment to keep it going all that summer without letting it open one bloom the whole season; to have it kindly seen to during that winter and next spring, and to take pollen from a particular truss at midsummer, and from particular flowers of that truss. I say I am quite sure these are safe steps to pursue with two such breeders.

Then I have some reason to suppose, although I have little experience to back me, that if the cross seeds were to be had from a weak parent, by the pollen of Defiance, which is very strong, that I should need to reduce Defiance just in the same way. What makes me name Defiance is, that of all the very strong Scarlets it is the most unwilling to seed by the pollen of the medium and the small in stature of its race. But keep it twelve months between starvation and death's door, and it will cross with most of them for an experiment; but it is too coarse in all its parts for profitable breeding. Such a plant as Mangles' Variegated Geranium I should suppose would need three seasons of the highest cultivation, with a minimum of stress upon its energy—that is to say, without allowing it to ramble about, as is its natural habit, or to produce one flower the whole time. Then if one undertook to cross it by the pollen of the Golden Chain, as has been done by Mr. Smith, I would have the Golden Chain invigorated just in the same way as Mangles', or the opposite way to that which would be necessary for Defiance for the same purpose. Both the father and mother in Mr. Smith's experiment appear to me to have not been quite up to the point of profitable breeding at the time he crossed them, and that was the real cause of the impossibility of rearing the seedlings, and not the fact of the pollen having been taken from the short stamens.

The prospect and possibility of a hundred trials of the same experiment being made next summer, induced me to write thus at the very beginning of the most busy season for crossing yet on record. Now and during the whole month of January is the right time to give the final potting to all the mothers of all the seedlings which will be worth looking at a second time by the Floral Committee—florists' flowers, bedders, and all hybrids, unless, indeed, the intended pollen parent is of very weak constitution. In that case I should not think it desirable to pot the much stronger mother sooner than the middle or end of April. Then it would have to be making new roots the whole time it was maturing the crosslings, to coin a significant term, and that of itself would be abundantly sufficient to balance the respective powers of both parents.

For all bedding plants which come from crossing, it is of the utmost importance that both parents be of the very same constitutional strength, or as near it as can be had—that both should have been under the highest cultivation the previous year with the above limitation—and that the mother is not wasting her strength in making fresh growth, or new roots, immediately before the crossing is effected and about that time; but from the time the seeds are sure of having "taken," as we say, or past the period at which that kind of plant would cast its pods if they had not been fertilised, I never found that good or bad treatment was of much consequence to the seedlings. I know the very worst treatment of the parent is of no consequence to the seedlings of all Geraniums after they are fertilised twelve or fifteen days.

Although I never crossed for a florist's Pelargonium, nor ever read a word about the way they prepare them for matching, I am satisfied from my knowledge of other sections of the family that the Pelargonium is not much different from the Scarlets in this respect—that two-year-old plants make the best mothers—that the mother should not have been much stressed by free-flowering the previous season—that it ought to have all its roots made and finished, and the pot brimfull of them by the end of March or very early in April—that the first truss of bloom is not the best to select flowers for crossing from—that a strong side branch is the best to bear the blooms for crossing—that no more than one truss be allowed to be on one such branch—that no dependance can be placed on the three blooms which generally open first, that is, those from each outside or shoulder of the truss and the very centre one, neither is there much to be expected from the last two or three flowers from the lower or bottom of the truss—that all such flowers are discarded by careful breeders—and lastly, that the plant is stopped carefully from the first day of crossing—also, that all the flowers to be crossed on one plant should be done as nearly at the same time as is practicable.

At all events the foregoing have been my grand secrets, and of the value of any one of them I have not the smallest doubt—they are all essential to good breeding. D. Beaton.

CULTURE OF THE VINE IN THE ORCHARD-HOUSE.

The term "orchard-house" means simply a plot of land planted with the usual orchard trees, and covered with glass. The idea may be carried out to any extent by adopting the ridge-and-furrow roof supported by cast-iron pillars. I observe orchard-houses are being built in various parts of the country, and, therefore, the system or mode is having a fair and somewhat extensive trial.

No doubt in some cases there may be failures through want of good judgment and proper management, and, I may add, experience. Its most strenuous and most successful advocate is Mr. Thomas Rivers, of Sawbridgeworth, ably seconded by Mr. Pearson, of Chilwell, near Nottingham. Both these gentlemen have written on the subject, and have been successful in producing crops of good fruit in their orchard-houses. I have for many years been recommending all Peach-walls to be covered with glass; for the failure of the crops has of late years been the general rule. Indeed, good fruit from open walls is rarely obtained.

The original idea on this subject was to merely protect the fruit trees from early and late frosts by covering them with glass in the roughest and cheapest way; and there is but little doubt but that idea fairly carried is a beneficial one. Orchard-houses, however, are now of more significance; many that I have seen are elegant structures of great extent, and some are even heated with hot-water pipes, so that the fruit trees are better protected both when in blossom and when ripening their fruit; and besides that, the wood is more certain to be well matured for successive crops year by year. My object in this paper, however, is not so much to enter into arguments either for or against this somewhat novel mode of cultivating our, what may be called, half-hardy fruits. The fact is patent enough that orchard-houses are now very numerous throughout the country, and time will show whether they are really useful structures. In the meanwhile, as shade is beneficial in hot clear sunny weather, there cannot be a more beautiful and at the same time more useful mode of obtaining that shade than by planting the more hardy kinds of Grape Vines for that purpose, or even some might be grown in the bush style amongst the Peaches, Nectarines, Plums, Pears, and other inhabitants of the glass-covered orchard. The pillars that support the roof might also be clothed with the ample foliage, the fragrant blossoms, and the rich juicy fruit of the Vine. I might even go further, and say that an orchard-house might easily be converted into a grapery—a consummation that would be desirable in case the other kinds of fruit should from any cause have failed to give satisfaction.

The points of culture to be attended to in order to succeed with the Vine in the orchard-house may be briefly stated to consist of, first, the selection of suitable kinds; second, the right kind of soil; third, planting; fourth, pruning; fifth, training; sixth, watering; and seventh, general management.

VINES SUITABLE FOR THE ORCHARD-HOUSE.—*Black*, Black Hamburgh, Black Champion, Ingram's Prince of Wales, Black Prince, Lombardy, Black Muscadine, Esperione. *White*, Royal Muscadine, Dutch White Sweetwater, Golden Hamburgh, Pitmaston, White Cluster.

SOIL.—The same compost that I have described as suitable for the borders of a vinery is equally suitable for the orchard-house. It is indispensable that the borders should be thoroughly drained, especially if the subsoil is of a clayey nature. As the other fruit trees will require their due share of nutriment, the Vines should have a rather richer soil than is desirable for a common Vine-border: hence a good mulching of rotten dung should be spread over the surface round each Vine every autumn to restore the necessary nutriment that the Vines have drawn from the soil.

PLANTING.—Strong, well-rooted Vines should be chosen to plant in the orchard-house. If Vines that have been fruited one year in pots could be procured, they would be excellent for the purpose. The right time to plant them is early in February, before the sap begins to rise. Open a hole large enough to allow the roots to be spread out every way from the stem, then turn the plant out of the pot, and carefully uncoil the roots, and place the stem in the centre of the hole, reserving as much of the ball entire as is consistent with getting the main roots disentangled. Take care not to bury the stem any deeper than it was in the pot. When all this has been satisfactorily done, then if such a thing can be had, cover the roots 2 inches deep with well-decomposed leaf mould. If that cannot be had, then cover them with some of the compost that has been run through a coarse sieve. Press this down gently, and give a good watering with tepid water, which will settle the soil close to the roots, and then root-action will immediately commence.

WATERING.—As the border in the orchard-house is covered with glass, it can never be watered from the clouds: hence it is necessary to supply that indispensable element from the watering-pot. If rightly managed, every drop of rain that falls on the roof will be conveyed by gutters to a large cistern and preserved in it for the use of the orchard-house. It should be given in moderate quantities during the winter months, but when the Vines and other fruit trees are in full leaf it should be given most abundantly. When the trees are in bloom rather less will be necessary, and less also when the fruit and wood are ripening; but the soil should never be dust dry, because when in that state the fine fibrous roots will shrivel up and perish. If a dry air is needful—and that will be so when it is desired to keep Grapes hanging after being ripe any length of time—then to effect this the border may be covered either with large slates or dry sand, or where appearance is no object, with dry coal ashes. During the most growing season—that is, when the Vines are growing freely, and the berries swelling, a good watering once every seven or ten days with liquid manure will be very beneficial; but the moment the fruit begins to change colour, desist from using this enriched water.

PRUNING AND TRAINING.—The mode of pruning depends upon the mode of training: hence it is necessary to consider both operations at one and the same time. If the Vines are used to cover the roof, the spur-system should be adopted—that is, one main stem should be trained up to each rafter, or if there are no rafters, then strong wires 5 feet or 6 feet apart should be fixed to the roof to train the Vines to. The pruning then will be to cut off the laterals every autumn down to the lowest bud, and shorten in the leading shoot to about 5 feet or 6 feet till the entire length the Vine was to cover is furnished with spurs. After that for several years the spur-pruning will be all that is required.

For the bush Vine the pruning will be on the same principle—that is, forming spurs; but each spur will be, as it were, independent. There will be no leading stem. The bush will [illegible] on one leg and branches come out regularly [illegible] side so as to form a bush like a Currant or Gooseberry bush. Every year at the pruning time the young shoots should be cut back to the lowest eye. By this mode a Grape bush will be many years before it is too large for the orchard-house.

Then there is the spiral Vine. This is formed by placing five strong, tall stakes in a circle, the diameter of which may be 2½ feet or 3 feet. To prune the Vine for forming a spiral, let it be cut down as soon as it is planted to three eyes. I use three for fear of accidents. Let them all break, and as soon as possible tie the best shoot to one of the stakes, stop the other two at the third leaf, and as the leading shoot advances tie it to the next stake in a sloping direction upwards, and so continue to secure the shoot to each stake as long as it will grow. Eventually I should expect it will reach to the top of the stakes. Observe, each round should be a foot at least above the last. Keep the laterals well stopped through the summer, and when the wood of the stem appears of a brown colour cut those laterals clean away. Then in the pruning season—that is, about the end of the year, cut the shoot back to half its length, choosing a good prominent bud for starting the following year. After that let the main stem be furnished with spurs, but not too many. I find one every 15 inches is a good average distance; the rest of the buds should be rubbed off just after starting. A Vine trained thus spirally when arrived to some size is very fruitful, and also very handsome when in fruit.

STANDARDS.—This is the last mode of training worth noticing. To form these nothing more is needed than to place a strong stake close to the Vines as soon as they are planted, care having been taken to procure them tall enough for the purpose, cut them to the desired height, and disbud them up to three topmost buds. Then tie them to the stakes, and when the buds are breaking procure as many iron hoops, not flat but round, or if canes could be got and formed into the same shape they would do better; the iron ones must of course be painted. Let one of these hoops be fixed to the top of a stake, and when the three shoots are long enough bring them down by degrees and tie them to the ring or hoop. These at first need not be above 18 inches. The shoots should be trained equidistant from each other. In the autumn these shoots may be pruned in just to the hoop, and other three brought out from the base of each shoot, so that the second year there will be six branches, and that number will be found sufficient to form the head of the standard. In time it will be necessary to have a second hoop of wider dimensions, but that must be the extent, or the standard will occupy too much space.

An avenue of Vine standards would be a pleasant sight, especially if they were all uniform in height and breadth. The bunches would hang down below the shoots, and the effect would be unique.

GENERAL MANAGEMENT.—The management of the Vine in the orchard-house is not dissimilar to that of its management in the greenhouse. All useless summer shoots should be kept under, and such as have fruit stopped at a joint above the bunch; the bunches must be thinned pretty freely when the berries are the size of small Peas. Also, observe never to be too greedy of fruit; it is far better to have an average crop of fair-sized bunches with berries well swelled than to have a great number of small bunches and small berries. The giving freely of air, attention to the destruction of insects, the free use of the syringe after the berries are set, all these are points of culture that the amateur will duly attend to. T. APPLEBY.

PINE-APPLE CULTURE.

I HAVE a span-roofed house for growing Pine Apples divided into three compartments, each 16 feet long by 11 feet 6 inches. Path down the centre, leaving tan-beds (partly heated by hot water) on each side 4 feet 3 inches wide. How many Pines ought to be annually fruited in such a house? The house is well supplied with evaporating-pans. Is there any fear of overusing these at this time of the year?

I have frigi domo covering for frosty weather, to be used at night. Do you advise its general use at night (frost or no frost) to prevent the rapid condensation of vapour on the glass, and to allow the requisite temperature to be kept up with less fire heat? Or would its general use at night (as my gardener believes) draw the plants? I cannot imagine this possible, as no light would thereby be excluded.

My span roof is erected on the orchard-house system with light rafters 20 inches apart: the house, therefore, is unusually light. During the late frost (thermometer at 16°) we had no difficulty in keeping up the temperature inside at from 65° to 70° at night. But I have thought of double glazing, but am deterred from the expensive experiment by the fear that green fungus may accumulate between the two inner surfaces of the glass which it would be impossible to remove.

In addition to three moveable lights in the roof of each house, ventilation may be supplied to any one or all the houses by dry drains communicating with the potting-shed and the open air. We find this a very useful method of supplying air in cold weather.

Is the deficiency of flavour in the new Providence Pines grown in this country owing to the want of light in most of the old glass houses, or is it an inferior sort of Pine Apple?—C. S.

[If you allow 24 inches to 30 inches to each plant, and more if the plants are large, you may calculate for yourself how many fruiting plants each space will hold. When Pines are swelling their fruit, 65° at night would be high enough. These will need more atmospheric moisture than those growing or merely showing fruit; but even in those swelling the moisture should not be overdone, as the fruit is apt to be inferior in flavour in consequence, and also to be hollow and rotten at the heart. The others growing will need much less moisture in the air. That must be regulated by the amount of fire heat given. There is not the same need of covering in mild weather as in cold, but there will be little drawing of the plants in consequence, if the temperature inside is low enough. However, in mild, clear, moonlight nights, we would rather keep it off. A little air will prevent so much condensation. If double glazing is so well done as to prevent all air or moisture penetrating to the enclosed space, there would be little danger of the green matter forming; if not, it will be sure to do so: hence in double glazing it is best to have the upper glass, at least, moveable in sashes. There can be no question as to the mode of supplying air.

The Providence is not a first-rate Pine. It is better in general in this country than in its native home, and is very rich indeed, if not deluged with too much moisture and it is cut before it is over-ripe. The other matters are under consideration. To get at minutiæ, at present, journies would be necessary, and general details have already been given.]

PEACH-TREE PRUNING.

In forming a handsome and prolific Peach tree, although much is to be accomplished by stopping and disbudding—*i.e.* preventive pruning—still the use of the knife in moderation is necessary. The modes of training to which this tree has been subjected are very various, and many of them very fanciful. We, however, have not now to enter into a description of the vagaries of "Hitt" and "Hayward," or to expatiate upon the far-famed system of the Montreuil gardeners, whose success, although great and indisputable, is probably owing more to their sunshine than their superior skill—for no amount of skill on the part of the pruner can compensate for immature wood, and the injurious effects of late spring frosts. We shall, therefore, confine our observations to the mode of training principally adopted in this country—viz., what is termed fan training.

As the fruit of the Peach is produced upon the last years' wood (*fig.* 1, in which *c c* are blossom-buds, with a leaf-bud between them), it is important to adopt such a mode of training as shall insure a constant succession of young wood. This is, perhaps, not accomplished in a more simple and regular manner by any other mode with which we are acquainted; and as our object is the elucidation of principles involving practical results, rather than to investigate hypothetical fancies, we would refer such of our readers as desire to drink deep of this kind of knowledge to the more copious treatises on the subject by various authors, more particularly to the "Encyclopædia of Gardening," by the indefatigable Loudon, where training suitable "to all sorts and conditions" of gardeners may be found.

Let us now proceed to the commencement of the fan-shaped tree, which we will suppose to be what in nursery parlance is called a "maiden" tree—that is, it has made one year's growth from a bud inserted in the stock in the previous year. *Fig.* 2 represents such a tree, which for the first season is to be headed down to four eyes, so as to produce in the season following four shoots, two on each side. The plant (*fig.* 3) has now assumed its rudimentary shape, having four branches diverging from the common centre like the radii of a wheel. In the following season the upper branches must be shortened, so as to produce each three shoots, one in the centre, one on the upper, and one on the lower side; and the two lower branches must be shortened, so as to produce two shoots each. This will give ten principal shoots, which, when regularly trained, will form the skeleton of the future tree. These must again be shortened, so as to produce subsidiary shoots, upon which the future fruit is to be borne; always taking care to preserve that which springs from the lowest bud, and not in any subsequent pruning to cut such shoots clean out. Persons who are not conversant with

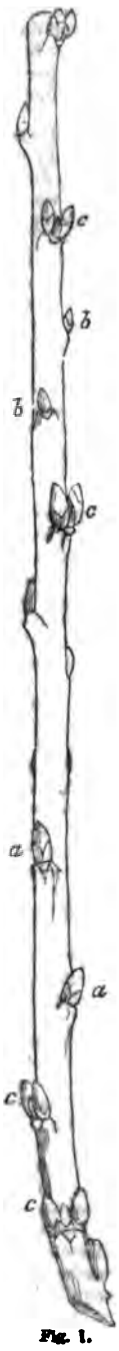


Fig. 1.

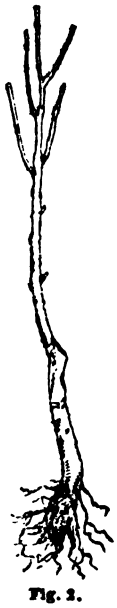


Fig. 2.

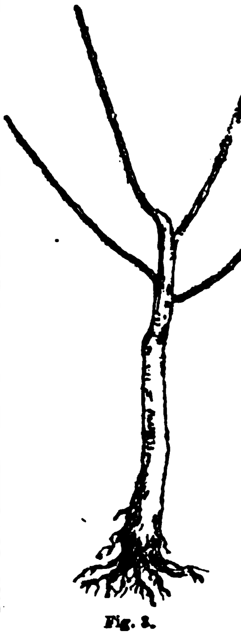


Fig. 3.

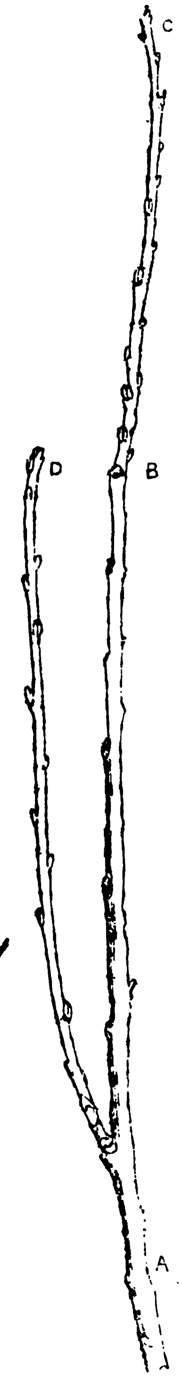


Fig. 4.

gardening matters generally spoil their future trees, for want of attention to this point. They do not keep them what we call "at home," and in consequence they become naked and unsightly.

In all Peach pruning it is important to know the distinction between leaf and blossom-buds, and to make every cut to a leaf-bud. The blossom-buds are round and prominent, frequently in pairs; and the leaf-buds are pointed and narrow. (See *fig.* 1, in which *a a* are blossom-buds, and *b b* leaf-buds; a leaf-bud is very often placed between two blossom-buds, *c c c*.) We have said that the fruit of the Peach is produced upon the shoots of the previous year, which having once borne it, cannot do so again. The grand object of the pruner, therefore, must be to provide an ample and regular supply of them in every part of the tree, and to take care that one part does not deprive another of its allotted nutriment.

When the tree is fairly formed and fruit is expected, great care must be taken to have this succession of young wood; and as the principal arrangement of the young shoots is made during the period of their infancy (and called disbudding), we will proceed to offer a few remarks upon it, first explaining by *fig.* 4 the mode in which the succession is kept up. From A to B represent a piece of two-year-old wood, which has borne fruit in the past year; from B to C is wood of last year's growth; and the shoot D is also of last year. If the gardener were to retain all the shoots which he finds, his tree would be too crowded; for he must not forget the importance of light, to which we have so often adverted. He will, therefore, cut out the new barren wood from A to B, with its point of young growth C, leaving the shoot D to replace it for next season; to be itself replaced by a new shoot from the lowest bud at its base. By observing this rule *ad infinitum*, trees may be kept well furnished with bearing wood for many years, whilst by neglecting it the finest trees may be spoiled in two years.

When an additional supply of young wood is required, the young shoots must be shortened back to within a few inches of the base. In the case of shoots which have few leaf-buds, and those only at the extremities, if this is not attended to, nakedness must result. It is of consequence in fan training that a certain proportion of wood be annually cut back for future supply. Where wood is not wanted, some of the shoots may be retained at their full length; but the greater proportion may be shortened a little, as the points will often be found unripe.

We now come to the consideration of a portion of preventive pruning, which does, or should do, the greater part of the regulation of the wood of the complete tree in a state of full bearing. We mean disbudding. It must be apparent that if all the leaf-buds upon the last year's shoots were allowed to grow uncontrolled, a forest of spray would be produced, which would be weak, watery, and unripe, instead of being hard as mahogany, with plump and well-organised buds; and it is equally true that there is a certain quantum of foliage necessary for the elaboration of sap under the influence of light. All superfluous growths, then, instead of adding to, diminish the store of organisable matter for a future year: hence the importance of removing them in their young state, and preventing their undue appropriation of those energies of the tree, for which, in their crowded state, they can reciprocate nothing.

We will suppose the fruit of the Peach just formed, and the young shoot from 1½ inch to 2½ inches in length. This is the period most important in the formation and perpetuation of the supply of young wood. All which are not required for next year's bearing must now be removed, always leaving that one which proceeds from the lowermost bud and the leading one, and thinning the other so as to leave no more than can be exposed to light and air. When a fruit is formed at the base of a shoot which would otherwise be removed as unnecessary, it may be stopped at about 2½ inches or 3 inches, as the leaves assist in elaborating matter for its nourishment. Frequently what are called "adventitious" buds are protruded from the old wood (this occurs most commonly in Royal George Peaches); the careful operator will not fail to regard as a great boon any that are well placed, and to preserve them accordingly.

The great art of pruning consists in so arranging and balancing the parts of a tree that no one attains undue luxuriance, or becomes, on the other hand, too much debilitated from its low position or over-bearing. Constant care is necessary to arrest the undue progress of the stronger wood by timely pinching stopping), and it is the judicious practice of an excellent gardener to stop the points of all the central shoots about the [illegible] of the maturation of the fruit, leaving the lower branches untouched, and allowing them to continue their growth.

It is usual, in fan training the Peach, to allow the young wood to be produced both on the upper and lower side of the principal branches. Mr. Seymour, an excellent gardener, departed from this rule, training his young wood exclusively on the upper side. We have ourselves also departed from the rule, but on the contrary obtain all our bearing wood from the under or lower side of them; and we venture to recommend this, because in our opinion the tree is balanced better, and produces wood of more moderate growth, the sap always flowing with a vigour proportionate to the vertical direction of the branches.

All who would have good Peach trees must pay great attention to the disbudding process; this, with timely stopping and occasional curtailment of gross-feeding roots, will nearly supersede the ordinary amputation practice. If the inquiry which we so often hear made—How should I cut my trees?—were changed into "How shall I prevent my trees from requiring so much pruning?" cutting and maiming would be at a discount, and success more frequent both with amateurs and professional men.—H. BAILEY, *Gardener, Nuneham.*

HERBACEOUS PLANTS—BEDDING-OUT—PALMA CHRISTI.

A GENTLEMAN writing in your publication of December 10th (without signature), throws out some insinuations against the present system of bedding-out, which in an editorial note you seem rather to resent, and to accuse the writer of being obstinately prejudiced in favour of his own ideas to the exclusion of all else. Are not the advocates of the system you defend, at least equally open to the charge you bring against your unknown correspondent?

For some years back I have looked sadly on at the destruction, one after another, of the collections of herbaceous plants in gardens. Both in my own neighbourhood and elsewhere they have ceased to be the fashion; and no intrinsic merit will save them from being huddled into some out-of-the-way corner, if not absolutely condemned to the rubbish-heap, in order to make room for their less permanent, though, perhaps, more gaudy successors.

The origin of the popularity of the present plan is evident enough. The Earl of A., or the member for Blankshire, leaves home to attend to his parliamentary duties almost before the earliest spring flowers have made their appearance. The ladies of the family, of course, accompany him, and the gardener is left to his own devices until Midsummer-day is long past and the most attractive of the herbaceous-border plants, as well as almost all the flowering shrubs, have had their day. He, consequently, not unnaturally turns his attention to the latter months of the summer, during which only his labours are likely to be appreciated by his employer; and for that season, of course, finds his Geraniums, Verbenas, and Calceolarias most effective.

Were the effects of the unnatural time of year at which the London season is fixed to be confined to the gardens of those who frequent the metropolis in the spring months, I should have less to say against the bedding system, which I admit to have very great beauties, and when confined within proper limits and to suitable places to be one of the greatest improvements in modern gardening; but it is very seldom kept within such bounds, and, like the cuckoo poult in the thrush's nest, it has no sooner established itself than it sets about to expel its neighbours without considering the superiority of their title. My lord's gardener, of course, sets the fashion, and the squire's and the rector's at least must follow. It is of no avail for the gardener, or the man-of-all-work who frequently represents him, to plead want of the necessary appliances and of sufficient space to imitate geometrical parterres at the castle. The former must be found by the expulsion of the long-cherished collection of greenhouse plants from their pots and shelves, and the latter by the consignment of the border plants to the rubbish-heap, and the curtailment of the shrubberies to the extent required; so out must go the tenants of both greenhouse and garden without regard to length of occupancy, or getting anything for the tenant-right we think so much of in this part of the world.

The result is, that it is now rare (and is becoming daily more so) to meet with many of our old and favourite occupants of the mixed border: they have long since disappeared from nurseries and are rapidly becoming extinct in private gardens also, except a few not always the most attractive, which earn a precarious existence as attendants in the shape of edgings to their more fashionable successors.

You will say, no doubt, "Pooh! this is a crusty old fellow nursing a gouty foot over the fire this damp winter weather, out of sorts with himself, the world in general, and all innovators in particular." But you are out: I have not yet inhabited this "Vale of Tears" for quite a third of a century, have full use of my legs and arms, and am in many respects as great an innovator as any of my neighbours; but I have an affection, perhaps now a little behind the spirit of the age, for old friends, and should like to see them at least provided with a suitable retirement for their old age, if they must perforce yield their former prominent position to the new comers.

I am far from accusing THE JOURNAL OF HORTICULTURE of encouraging this abuse of the present system, but I think the remark on your anonymous correspondent's paper savoured a little of a tendency that way. In its proper place, and where means exist for the supply of sufficient material in good condition, I think nothing can be better than a well-arranged geometrical parterre filled with the beauties of more favoured climates, and nothing, certainly, can compare with it as to brilliancy and effect in autumn.

By the way, I see that "D.," of Deal, has discovered in Paris, that Ricinus Palma Christi makes a handsome ornamental plant in summer. We have had it in this remote corner of the United Kingdom every summer for the last quarter of a century, and in a fine season it makes a truly magnificent object. In the year 1859 I had a plant of it 10 feet high, with a stem 3 inches through, and leaves many of them 18 inches in diameter, of the very variety "D." speaks of, with the red stems. It is very difficult, however, to procure it true from seed. I have failed in doing so the last two seasons, although I got the seeds from one of the first London houses—labelled Ricinus sanguineus it is true, but the produce had none of the beautiful colouring on the stem, though ornamental enough in other respects. The plant, unfortunately, does not ripen seed in our damp climate.—R. S. D., *Co. Down, Ireland.*

[We endeavour to hold the balance even. We admire herbaceous plants, and wish we could obtain more communications concerning them. We admire well-arranged bedded-out plants also; but we have never said a word expressive of a wish that bedding-out should banish herbaceous plant culture. No such wish exists with us; but we do say and have said, that every one has a right to ride a hobby of the colour he likes best.—EDS. J. OF H.]

WHITE-COROLLAED FUCHSIA—PROLIFEROUS PRIMULA.

PERMIT me to add to the list of white-corallaed Fuchsias at page 253, No. 39, the name of Madame Cornelissen. This, in my humble opinion, is the best of them all, and I think will satisfy your correspondent.

I mentioned some time since a plant of Cerise Unique Geranium, which threw up proliferous trusses. I have now in blossom a Primula plant which has no less than four trusses one above another. The topmost has five pips. Mr. Darwin may think it worthy of note that the second, third, and fourth trusses are all central.—P.

WHAT ABOUT THE SCOTCH PEARS?

NOW, then, let us have a little more gossiping about the Scotch Pears that challenged all England for flavour, symmetry, and size, and carried off first honours at the Royal Horticultural Society's winter Show. Well done, my friend and namesake, Mr. Anderson, Oxenford! Your unprecedented success amply repays the moral courage exhibited by you in beating English growers on their own ground with no less than twenty-two distinct dishes, "all correctly named." You very modestly say, in a private letter to me, that "you are no authority as a fruit grower, and don't wish to be held up prominently to the gardening world." Do not say so, else you will have the hounds at your heels; for it is hard to be beaten by a first-rate authority upon an equal footing as regards climate, &c; but ten times more so if your opponent only rates himself as an ordinary practical mortal, with all the difficulties concurrent with an uncertain climate and a naturally cold subsoil.

When the intelligence first reached us, we were quite as much astonished—agreeably in this instance—as we were on hearing of the insult by a kindred nation on our flag. We certainly would have been less surprised had the samples in question been grown in some of the alluvial soils contiguous to the seashore, beginning from Berwick all the way up the Frith of Forth as far as Stirling, and back again on the other side, round as far up the Frith of Tay as the ancient city of Perth, and through the Carse of Gowrie; or even the lower parts of Ayrshire and Renfrewshire, all of which can boast of a climate from 5° to 10° milder in a general way than Oxenford; and what adds to the phenomenon, there has scarcely been a dry day from July up to the present date in the lower half, geographically speaking, of Scotland, so that all things considered, Mr. Anderson must know a great deal more as to successful cultivation than he takes credit for, else Berkshire, Hampshire, Surrey, Kent, Middlesex, Hertford, Essex, Cambridge, Suffolk, &c., must have been but indifferently represented as to quantity if not as to quality at Kensington on that occasion.

Oxenford is 450 feet above sea level, and lies on a very retentive cold substratum of clay, so that the roots of the trees require to be lifted every two or three years. Mr. Anderson in reply to one or two queries of ours says, "The aspect from which our Pears were gathered was chiefly from the south, and in one or two cases from the south-west. Our soil, I believe, suits Pears pretty well, being of a heavy nature. The subsoil is a most retentive clay. Certainly in this respect not unlike that almost impervious blue and blackish clay, which forms the substratum of the greater part of Middlesex and a large part of Essex and Hampshire, technically named, I believe, 'London clay;' and it is only by frequent lifting up of the roots that we are enabled to get good fruit, and even with this we require dry warm weather in autumn to bring up the quality." Mr. Anderson is somewhat sceptical of the good effects of root-pruning in its general sense. He says on this point, "No, I keep all I can; the lifting is check enough, and I place them in such a medium as will furnish the proper food, and plenty of it for maturing good fruit." Doubtless this is a very wise method; for in the one case the top roots may remain undisturbed, whereas the bringing of them all up towards the surface induces a more fruit-bearing action, and renders them as much within the control of the cultivator as a first-rate-made Vine-border.

In the greater part of this northern clime fruit trees that blossom in April and May produce a very uncertain crop; and our seasons fluctuate so much that it is getting more uncertain every year. Recourse has to be had to protecting material in order to make certainty secure. Observe what Mr. Anderson's experience relative to this. "I have never failed in getting a crop of Pears from our south wall these thirteen years; but I must tell you that I cover in spring with canvass, as otherwise our labour would be lost. Our crop this season has been equal to the average of years, notwithstanding the untoward season of 1860 for ripening wood. To show the contrast, we had scarcely half a hundredweight of Apples in the place. This has been the general rule occasioned in this part by the biting cold easterly winds that prevailed in May when trees were in blossom. Some seasons I feed largely, but this year they received none: consequently the selection was made from our general crop, and we have been using and still have as fine fruit for table as that which carried the prize."

To the cold wet season is doubtless due the retarding of Flemish Beauty, generally fit for use in September and October. Next in order of earliness are Beurré Diel, Beurré de Capiaumont, Colmar d'Aremberg, Louise Bonne of Jersey, King Edward's, Marie Louise, Duchesse d'Angoulême, Doyenne Gris. Next a shade later come Beurré Clairgeau, Colmar, Winter Nelis, Napoleon, Crassanne. In the next group come Beurré d'Aremberg, Glou Morceau. Later still come the grand stewing Buchanan's Spring Beurré, Rousse Lench, Easter Beurré, Suzette de Bavay, and Maréchal de la Cour. The variety called Poire Neill I know nothing of. This is certainly a very respectable array exhibited as they all were, seemingly in first-rate order, and opens up new prospects for northern competition, besides serves as a first-class certificate to Mr. Anderson's future energy in the same direction. He openly acknowledges that he is proud of his luck, not so much on his own account as for the credit of Scotland, in testing what can be done, and particularly as it was the means of shutting the mouth of our great gun, the

'Doctor' who seemingly has not so much to say about Pears as formerly." So much for the credit of Scotland in general, and Oxenford in particular.—JAMES ANDERSON, *Meadow Bank, Uddingstone.*

VARIEGATION IN PLANT LEAVES.

I HAVE read with much interest the papers which from time to time have appeared in your Journal on the subject of the variegation of plants; and, without pretending to give any opinion on the question whether variegation be disease or not, allow me to throw out a few suggestions in favour of the latter hypothesis.

Your logically-minded readers will perceive that it does not follow that variegation is necessarily disease because disease sometimes produces in the leaves of plants an appearance analogous to variegation. The leaves of a Geranium sometimes exhibit round their edges a yellowish-white band when in a sickly state; but this is very different from the pure white band and fresh green of the Flower of the Day, which is no more like disease than sleep is to death—though these are said to be twin sisters.

I have seen also the leaves of a Camellia show symptoms of variegation when unhealthy, but it is not a logical deduction that variegation is disease. After all, may it not be that we are trying to fathom one of those mysterious operations of Nature which to our finite minds must ever remain unfathomable? Can any one explain how it is that parents of dark complexions and black hair sometimes produce offspring with white hair and pink eyes? or (putting albinos aside) with blue eyes and auburn hair?

Is not disease a step towards death? Take a dozen Attraction Geraniums and a dozen plain-leaved ones, are the former less healthy than the latter—more liable to die, more difficult to propagate or multiply? I think not. Where, then, is the disease? There is no sign of it unless it be in the dwarfish habit, and everybody knows that dwarfish stature may be co-existent with good health. I am no botanist, and take only a common-sense view of the matter; but is it not possible that the soil may have something to do with variegation? We all know the bleaching power of the chlorates of lime—may the presence of this salt in the soil produce variegation? The flowers of the Hydrangea may be changed from pink to blue by the addition of iron to the soil. May not the leaves of plants be differently affected by other salts?—M.

MANAGEMENT OF THE LARCH.

IN reply to "SCOTUS" I would beg to observe that the Larch is a foreign tree, a native of the Tyrolese, and other mountains in the south of Europe; and were it not an alpine tree, perhaps it would not grow in Scotland at all.

In a thousand cases we see this valuable timber tree very badly treated. Planted on a flat moor in a poor, shallow, heathy soil, unprepared, with a hard tilly subsoil, impervious alike to water and tree roots, with twice the number of trees there ought to be, all struggling for more field in the soil, and light and air above ground. Larch having a small leaf requires much light; and it certainly gets more of this on the slopes of its native hills, where it is under clearer and more sunny skies than ours. There the trees rise the one above the other, which gives them more light and air than were they growing on a level plain; and we are told that where those trees grow on the slopes of snow-clad mountains when the summer heat dries up the soil at their roots, the same heat melts the snow and sends down a seasonable supply of moisture to their roots.

From many years' observation I am of opinion that frost is the chief agent and cause of the deterioration of the Larch in this cold climate. In the spring just when the Larches are coming into leaf, they are often seared by frost, the sap stagnated from want of the action of the leaves, and becomes food for the Larch bug. In dry seasons, and unfavourable situations, the trees struggle on until the autumnal rains, when they are set growing, and continue to grow till checked all at once by the first sharp frost. Now with immature alburnum, and bark too full of sap, they are bad subjects to stand a severe winter. In this unfavourable state they are often severely frost-bitten, the vessels of the bark burst, and destroyed. Young trees from ten to twenty years old are more liable than older trees.

The first and second following years the blackish blotches appear, here termed "cancers." After the severe winters of 1838 and 1855 cancers were very numerous, not only in the Larch but other trees—viz., Laburnums, Planes, Apples, Currants; and old Broom and Whins were killed to the ground.

Those who wish to grow this valuable timber tree (and it is valuable and durable whether young or old) must pay more attention to its culture, as regards soil, situation, timely thinning, and no pruning until the lower branches are dead, which might be done with a hard wood stick.

The best Larches in this locality grow in a dale at the foot of a felspar granite mountain (felspar's constituents contain much more nutritive qualities than quartz, &c.), in a depository of the *débris* of decomposing granite. Ferns, sorts, Grasses, Foxgloves, &c., Birch, Hazel, Sloe, Thorn, and Dog Rose, &c., all go to form, and are indicative of, a pretty rich friable loam. The Larches here are 100 feet in height, and as many years old. Some of them girth 10 feet to 11 feet, 4 feet from the ground. Some Norway Spruces are equally large, but some of them are giving—rotting at the heart, the soil being too dry for Spruce, but a good soil for Beech, Oak, and Spanish Chestnut, and certainly for Larch too. And I believe the "King of the Larches," in Scotland at least, grows in a similar soil, but I do not recollect the rock at Dunkeld, in Perthshire. The said tree was planted in 1735, and in 1852 it was 96½ feet high, 15½ feet in girth, 4 feet up, and contains 412 cubic feet.—ILEX, *Deeside.*

HURST HOUSE SEEDLING PINE-APPLE,
ALIAS FAIRRIE'S QUEEN.

YOUR Raby Castle correspondent (Mr. Shortt) is pretty correct respecting the origin of the above Pine-Apple; it was, as he states, raised originally at Hurst House, the stock being purchased by A. Fairrie, Esq., of Mossly Hill, Aigburth, for a certain sum. It was then repurchased by Mr. H. Williams, then gardener at Mossly Hill, on the conditions that he was to leave Mr. Fairrie in possession of a stock. If I am wrong in my statements I have no doubt but Mr. Williams will soon set me right. He, with his brother, Mr. B. S. Williams, of the Paradise Nursery, had the honour of sending it out under the name of "Hurst House Seedling;" and, like Mr. Shortt, I do not see the necessity of rechristening after being before the public so many years under its original name.

It appears, from conversation I have had with several first-class gardeners who purchased stock of it, to be somewhat shy at starting into fruit. I am sorry if such is its true character. When I saw the original stock at Aigburth it appeared to be as easy a fruiter as the Queen. Certainly it is a desideratum where room is an object. Flavour I cannot give an opinion of further than Mr. Williams, the then gardener, whose honesty I cannot doubt, said that it was excellent in all respects.—JOHN EDLINGTON, *Crom Castle, Newtown Butler, Ireland.*

NOTES ON MY HERBACEOUS GARDEN.

(*Continued from page* 217.)

THE four beds under notice in this paper were ovals, about 8 feet over, and were match pairs: consequently, some regard was paid to bringing the occupants of each bed as uniform in height as circumstances would permit. The question of colours was not so predominate a subject then as now.

NOTES ON BED NO. 2.

This and No. 3 were planted at one time. No. 2 was planted with Aquilegia canadensis (purple Columbine), in October. This, unlike the Delphinium, succeeds best from seeds, which were sown in April and transplanted in good soil in the reserve garden. An edging of the white Alyssum, of a good width, was placed round the bed; and round the inner side of this was a double row of blue Crocus.

Since the penning of these notes there have been several additions to the Aquilegia. A. Skinneri is the most brilliant of these—viz., scarlet and yellow, and is very beautiful.

On reference to my notes of this bed, I find that after the first few days of March are past the Alyssum is producing its white and welcome flower-heads in abundance. The sheltered situation of this bed is very favourable for this early spring flower: and should the weather prove fine and open, it will in a week afterwards present a neat margin of a pure sheet of white flowers. The last days of April have been gay days with this bed. The white edging backed by the double row of blue Crocus has received many gratifying commendations. The Aquilegias, too, are putting forward an occasional flower, and will continue to gain more in number daily.

May is gone, and with it most of the flowers of this bed. I will see to filling it again at once. The Alyssum will be taken back to its old quarters in the reserve garden, planted under a high north fence in a compost which consists chiefly of sifted cinder-ashes. The Crocuses, too, will be brought here, but the Aquilegias will be taken to the rubbish-heap. The bed must then be forked; for the Antirrhinums, which have been grown carefully in pots and plunged for the summer display of this bed, are getting impatient for a move. I will take the first opportunity to bring them here, will saturate the ball of each plant entire previously to planting, and this done and the bed well filled, will mulch the bed over with a layer of fresh-gathered moss from the wood.

I have found this moss one of the best materials for mulching flower-beds, as it has no unsightly appearance, and, as well as obstructing the direct rays of the sun, prevents evaporation from the earth. It need not remain on more than a week.

As yet, June numbers but twenty-three days, and the Antirrhinums are decked with flowers; copious waterings in dry weather, with care not to let any number of seed-vessels accumulate, and they will flower on till September.

Bed No. 3.

This, as stated in No. 2, was filled in October, but not with the same kind of plants. Double Wallflowers were the chosen objects for the spring decoration of this bed from plants struck in the autumn of 1852, wintered in their cutting-pots with a little protection, and finally planted out in the reserve garden in the spring, where they had made fine plants by the time of their removal here. This bed had an edging of the blue Alyssum, backed by a double row of white Crocus. We have already had many April days; Crocuses are gay, but the little blue or purple Alyssum I find is not so proof against cold weather as its neighbour the white.

May day has been and gone this week past, but its occasional warm days have brought the Wallflowers to a high state of perfection; so fragrant are they on a still warm day, that the air for a short distance around them breathes a peculiar faintness.

June is here, and still some handsome spikes of flowers remain on the occupants of the bed; but they must soon be sacrificed, for the Pentstemons, grown expressly to take their place, require to be here, and must be brought at once. I will first well water them, and then plunge them in their pots, will transfer the Wallflowers to the reserve garden, where they will produce by autumn a good batch of cuttings. The little purple Alyssum I will let remain, to see if by such a plan it can be induced to flower stronger next spring. Crocuses, too, can remain to perfect their bulbs. I will continue to nip off the exhausted flower-stalks from the Pentstemons, as by letting them remain they are liable to check the flowering of the rising spikes.

The remaining two ovals were planted within a few days of Nos. 2 and 3. No. 4 had plunged in it some dwarf stocky plants of the Aucuba japonica grown in pots, and had an edging of Snowdrops; while No. 5 was being planted with the single Wallflowers, and had, as an edging, a stout ring of Winter Aconites.

This might have been termed their winter clothing. It certainly has done much to make the garden look cheerful through the dull months of winter, and, as spring crept on, the Snowdrops and Aconites gave an additional charm; but the sunny days of March are here—all is bustle and haste, so much wants doing and has to be done. I will clear away No. 4 immediately. I have in readiness for this bed a dozen plants of Dielytra spectabilis. The bed must be well trenched and manured, as they will be placed here for a permanency.

I have no further notes of this bed in the same year. In the next year I find it was in flower at the beginning of April. At the end of May had grown very strong, and was flowering luxuriantly, and continued to do so with the aid of copious drenchings of manure water at the roots for five consecutive months from the commencement.

Bed No. 5.

The Wallflowers in this bed were allowed to remain and flower; for the young Fuchsias, which have been raised to make this a permanent bed also, were too tender to stand against the cold winds of March. The bedding out-season has arrived. Proceed to clear the bed at once; and after it has gone through the same process of trenching and manuring as its neighbour, I will turn out the young plants of Fuchsia Eppsii directly. I have great expectations of these two beds when well established, and I am persuaded that the graceful bearing of both will not fail to enlist a whole host of admirers.

Before I close this paper, allow me to say a few words in reply to the humorous remarks attached by you to my last article. I do not deny the charge of trying to wage a war against the present bedding system; but you say you cannot comprehend why I do so. I ask you, Is a man expected to be a silent spectator of the ills and hardships his favourites are receiving from the hands of the advocates of the bedding system, and not to raise even his finger in their defence? But, perhaps, you have not seen how they are buffetted about, how they are placed in out-of-the-way places, in soilless nooks and corners, and there expected to thrive and flourish! and because they fail to do this, in such unreasonable places, they are banished and discarded, eradicated and condemned as worthless. If I am expected to bear all this in silence, I will henceforth do so without a murmur; but it will be with an inward gratification, that the day is not far distant when my old garden favourites will be once more occupying prominent places in the gardens of our nobles.—J. C. Clarke, *Wakehurst Place.*

[There is no progress without some enthusiasm, and we readily give a place to the zealous sentences of our determined champion of the Herbaceæ. We admire them as much as he does, but we cannot be so exterminating as to wish that no quarter be shown to the bedders.—Eds.]

CLIMBERS FOR GREENHOUSE—PRUNING PLUMBAGO CAPENSIS.

Will you recommend me a climber for my greenhouse? I want it to run up a twelve-foot wall and then along a fifteen-foot iron tie. The latter is the part I care about, as the wall is tolerably covered. Three similar stations are occupied by a Tacsonia, Cobœa scandens, and Mandevilla suaveolens.

Also, how am I to treat a Plumbago capensis planted against the wall last year, and now covering it up to 7 feet or 8 feet? Must it be cut back?—J. R. W.

[Bignonia Cheriri, or Passiflora racemosa cœrulea.

Merely shorten the top shoots of the Plumbago until it fills the space. When done flowering, all the side shoots below may be cut back to a bud or two. The flowers are produced on the young shoots of the summer's growth, which come from well-ripened buds on the shoots of the previous year. When established, you may prune it like a Vine on the spur system.]

NEW AND RARE PLANTS.

Stanhopea Bucephalus (*Bull-horned Stanhopea*).

Nat. Ord., Orchidaceæ. *Linn.*, Gynandria Monandria. This Orchid has also been called Epidendrum grandiflorum, and Auguloa grandiflora. Perhaps the richest-coloured flowers in the genus, being "a rich tawny orange, with deep blood-coloured spots," and so highly fragrant as to be too powerful for the drawing-room. Native of Ecuador, and in the Andes at an elevation of 6000 feet between Guayaquil and Loxa. Blooms in August.—(*Botanical Mag.*, *t.* 5278.)

Vaccinium Imrayi (*Dr. Imray's Vaccinium*).

Nat. Ord., Vacciniaceæ. *Linn.*, Octandria Monogynia. Native of the Island of Dominica. Handsome evergreen shrub, not more than 3 feet high. Flowers yellowish-green.—(*Ibid.*, *t.* 5279.)

Higginsia regalis (*Royal Higginsia*).

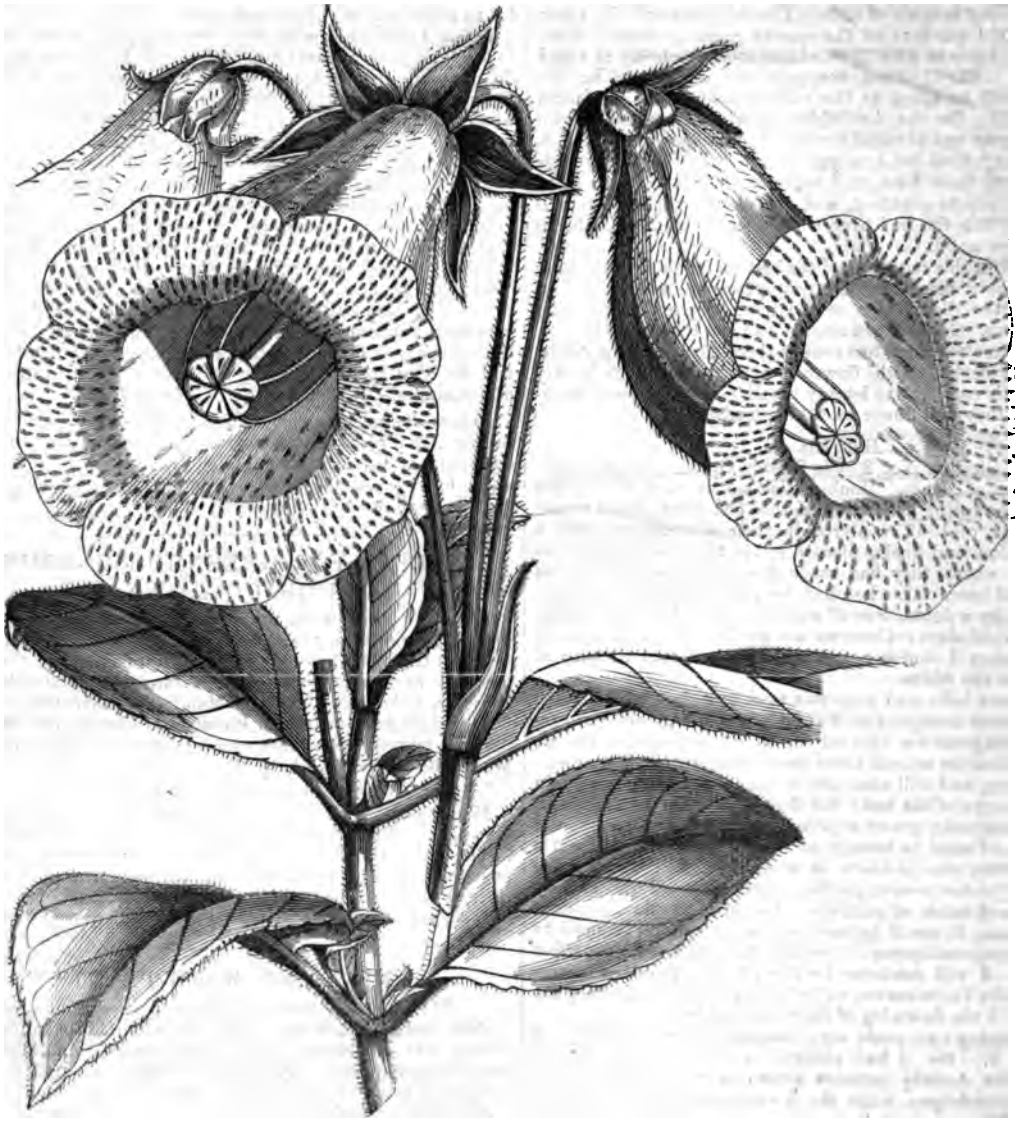
Nat. Ord., Rubiaceæ. *Linn.*, Tetrandria Monogynia. Called also Campylobotrys regalis. "No plant is better worthy of cultivation in the stove," on account of the extraordinary beauty of the leaves. These have a plaited upper surface, which is dark green passing to whitish-green in the plaits, and beneath purplish-crimson.—(*Ibid.*, *t.* 5280.)

Echinacea angustifolia (*Narrow-leaved Echinacea*).

Nat. Ord., Compositæ. *Linn.*, Syngenesia Frustranea. Native of Texas, Iowa, Illinois, and Wisconsin. Flowers 6 inches across; rays purplish-pink; height 2 feet. May be grown in tufts in the open border.—(*Ibid.*, *t.* 5281.)

CAMPANEA GRANDIFLORA (Large-flowered Campanea).

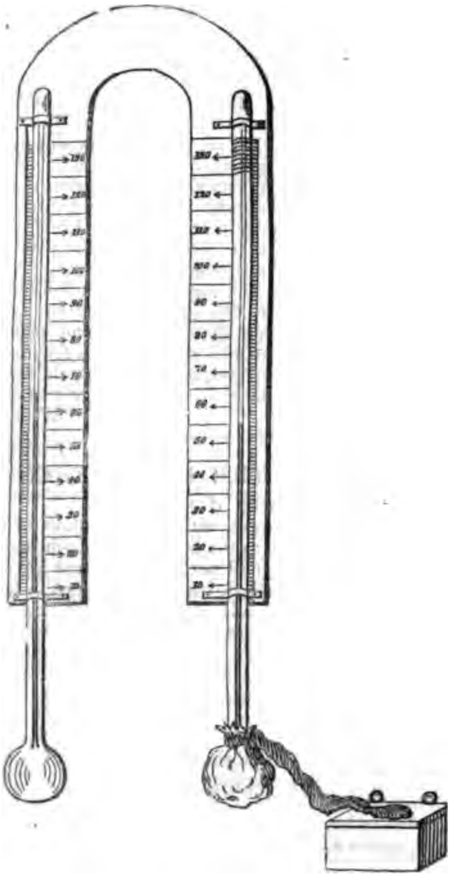
Nat. Ord., Gesneraceæ. *Linn.*, Didynamia Angiospermia. It has also been called Besleria and Drymonia grandiflora. It is very beautiful, and M. Van Houtte says that it thrives perfectly in a greenhouse, having for its soil a mixture of leaf mould and loam. The stems are subscandent, somewhat woody at the base, with opposite, oval, stalked, softly hairy leaves, of moderate size, sometimes unequal at the base, more or less acuminate and crenate-dentate on the margin. The flowers grow from the axils of the leaves, and the ends of the shoots, on longish peduncles, which are terminated by a few (about three), large, very showy blossoms on long erect pedicels; these flowers are large, nodding, irregularly campanulate, the tubes curved and ventricose beneath, the limb oblique, of five broad-spreading, nearly equal emarginate lobes; they are white, downy on the outside, the face of the limb elegantly marked with close dotted lines of rosy-purple. "We may hope to see numerous hybrids combining the beauty of this type with that of other Gesneraceæ." Native of New Grenada and Santa Fe de Bogota. Introduced to the continental gardens by M. Linden, in 1847.



THE CONSTRUCTION AND USES OF HYGROMETERS.

Various have been the instruments which philosophers have invented for ascertaining the hygrometrical state of the atmosphere. Catgut, wood, the beard of the wild oat, &c., were formerly used, but their hygrometrical properties vanished by constant exposure. De Saussure used the human hair, and De Luc a thin piece of transverse grain of whalebone; but where variation in length, volume, or weight is the mode of action, no dependence [illegible] placed upon the instrument. Daniell's hygrometer, which is a very good one, has many disadvantages —requiring very careful manipulation, and ether of the best quality. There is no instrument so good as a pair of good thermometers, the bulb of one being enclosed in thin muslin, to which is attached a piece of lamp-cotton wick communicating with a vessel of rain water; these should be renewed once a-month.

The conversion of liquids into elastic fluids is evaporation, and this goes on at all temperatures, from the hottest day in summer to the coldest night in winter; and if we only call 30 inches the annual amount evaporated from the surface of the waters of this globe (a quantity in all probability much below the average), water to the amount of 62,000 solid miles is each year changed into clouds, which clouds condense in their turn and form the copious showers which water the plants and supply the springs. When we consider the moist condition of the soil, an additional supply of evaporation must be added to make up the deficiency in this calculation. The process is carried on in the following manner:—The great oceans supply the air with moisture; the heat of the sun causing rapid evaporation, the aqueous particles are carried into the atmosphere in an invisible state until they approach a cold current, when they condense, and are visible as clouds, which float along until a further condensation precipitates them in the condition of rain, snow, or hail; these, when they fall on dry land, hasten along, accumulating rapidly, until the drops of rain form a stream, streamlets accumulate into rivers, and, at last, the drop is conveyed back to its parent, the ocean. The rivers all flow into the sea, carrying large volumes of water, yet the seas are never too full; and why? The oceans give back an equivalent, for evaporation is the cause, the making, of rivers, and is constantly going on to keep them flowing. Springs of water owe their supply to the same cause, and are cold or warm according to the temperature of the different underground strata through which they happen to flow. A mountain stream—*i. e.*, one originating on a high hill, is cold, whereas one whose reservoir is deep in the earth is warm; as for instance, the warm springs of Bath, or the still warmer ones of Iceland. Vapour is most plentiful at the equator, becoming gradually less abundant as we near either pole; but in tropical countries it is held in an invisible state, whereas, in colder regions it is condensed into clouds.



The dry and wet bulb thermometer is a modification of Dr. Mason's hygrometer. The latter has a glass fountain for the supply of water, which is easily broken by frost, whilst the common dry and wet ball thermometer is furnished with a zinc cup, having a lid with a hole in the centre for the cotton conductor to pass through; the cup is situated away from the dry ball, and its surface covered, in order that the evaporation from the water may not influence its readings. The bulb, which is covered by muslin, and moistened by means of the water conveyed by capillary action up the cotton wick, will show a temperature depending upon the following circumstances:—"The air in contact with the wet bulb gives enough of heat to vaporise the water, which being converted into vapour sufficient in quantity to saturate the space which the air occupies, the reduction of temperature will be according to the quantity of heat which has been combined in order to change its state from water to vapour." The difference indicated by the dry and by the wet bulb thermometer is occasionally (between April and September), 18°, and frequently from 9° to 12°; in other months, seldom more than 9°, and more frequently 4°; and in the depth of winter 1° to 2°. The temperature of the dew-point, which is deduced from the readings of the dry and wet bulb thermometers, is occasionally 30° below the temperature of the dry bulb thermometer, frequently in the summer 20°, and between September and April, 6° to 15°. When the pressure of the air is recorded (by a good barometer), at the same time with the readings of the dry and wet bulb thermometers, a number of useful and interesting particulars may be calculated. As an example, let us take the observations made at the observatory, Highfield House, during the quarter ending June 30th, 1850; the mean pressure by the barometer was 29·726 inches; mean temperature by dry bulb thermometer 52·8°; mean temperature by wet bulb thermometer 49°. From these we learn that the mean temperature of the dew point was 45·5°; the mean weight of vapour in a cubic foot of air was 3·7 grains; the mean additional weight required to saturate a cubic foot of air was one grain; the mean degree of humidity was 0·789 (1·000=complete saturation), the mean whole amount of water in a vertical column of the atmosphere was 4·5 grains; the mean weight of a cubic foot of air was 532 grains; the mean pressure of dry air was (reduced to the sea level), 29·518 inches, and the mean elastic force of vapour (or pressure of water in the atmosphere), was 0·327 inch.

The use of the dry and wet bulb thermometer to the hothouse gardener is twofold; first, as a weather guide; and second, as a means of regulating an artificial climate to such plants as cannot enjoy themselves except under certain peculiar conditions. With respect to a weather guide, take the example given by Mr. Glaisher. The dry bulb thermometer being 70°, and the wet bulb thermometer 55°, before moisture could be precipitated, the temperature must fall 15° (in which case the precipitation would most likely be mist or small rain); or the dew-point must rise 22·5°; or the quantity of aqueous vapour in a cubic foot of air must increase from 3·76 grains to 8 grains (in which case the rain would be heavy); or the temperature of the air must fall at the same time as the dew-point rises, and some conjecture may be formed of the probable duration and kind of precipitation, according as one or the other of these last-mentioned causes prevails. Without a dry and wet bulb thermometer, many valuable plants have been lost, although the precaution is so easily accomplished. All that is necessary is to learn the mean temperature of the air, and the mean degree of humidity of the climate from whence the plants have been brought. Suppose the temperature to be 70°, and the dew point 50·5°: provide a water tank, furnished with a moveable cover, so that a greater or less body of surface water may be exposed as circumstances require; heat your stove up to 70°, and give out as much moisture as will bring down the wet bulb to 57°, and you have then produced an atmosphere in which the plants will flourish.—(E. J. Lowe, F.R.A.S. *&c.*, *Gardeners' Magazine of Botany.*)

FERNS FOR BOUQUETS.

Flora would be glad to know what sort of Ferns are the best to grow for the fronds to be used in forming bouquets? *Flora* can grow them either in the open ground or in a greenhouse.

[For a warmish greenhouse Adiantum formosum and Adiantum cuneatum are among the best for cutting, only the latter shrivels quickly in bouquets, if not protected by a little oiled skin or gutta percha wound tightly round the stem. Davallia dissecta, D. bullata, and D. canariensis, Pteris argyrea, and

P. serrulata, are also each exquisitely beautiful and easily grown. The Adiantums (Maiden Hair), and Davallias (Hare's-foot), are best for bouquets of flowers for the hand; the Pteris kinds are more suitable for a vase. If luxuriant growth for cutting is required we strongly advise the top soil being gently shaken off and replaced by cocoa-nut-fibre refuse. The Ferns thrive in this luxuriantly. It should be covered with soil at the top, however, to keep it down.—E. A. M.]

CALYX OF CAMELLIA FALLING.

Will you inform me what can be the cause of the external folds of the cups of Camellia-buds falling off? as I have some which look quite brown and loose, and on being touched drop off, which causes the flowers when open to be wide and flabby, and prevents their lasting long. They are carefully watered. Will it also injure them to give them liquid manure once a-week until the buds open?—Inquirer.

[Either the middle of the ball of the soil has become too dry, or the soil has been saturated by bad drainage, or you have given the plants too high a temperature suddenly. Use clear water.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

Have manure wheeled upon vacant ground when the weather is frosty, and all spare ground turned up as soon as possible, so as to expose it to the action of the weather as long as may be. *Cauliflowers*, if the autumn sowing failed it will be necessary to sow in a box, which may be placed in a forcing-house; and when the plants are of a sufficient size they should be pricked out in a frame or a slight hotbed. *Celery*, the trenches should now be dug out to receive the benefit of the frost; in the spring Cauliflowers may be planted in them, and dwarf Peas or Lettuce between, which will be off by the time the trenches will be wanted for the Celery plants. *Potatoes*, if young ones are wanted very early some Early frame, Ash-leaf Kidneys, or any other early varieties, may be planted on a slight hotbed; if it is convenient to plant them immediately they may be laid in any warm place until they begin to start. *Radishes*, sow on a slight hotbed. Dung should now be prepared for forcing the various culinary vegetables which are required early—a considerable quantity of leaves may be used with it.

FLOWER GARDEN.

The flower-beds and borders in many gardens would be enriched by giving them a dressing of decomposed leaf mould, and, where it cannot be obtained, charred vegetable refuse, such as the prunings of shrubs, Gooseberries and Currants, edgings of walks, and many other things which turn up in the course of the season may be cheaply made to form an excellent substitute. Endeavour to forward on every occasion of inclement weather the preparation of labels and pegs for the beds, or any other article which you know will be wanted at the busy time of the year. The protection of plants liable to injury from frost must be attended to according to their respective requirements.

FRUIT GARDEN.

It is advisable to examine every week all the choice kinds of *fruits* that may be approaching ripeness, or are found not to be keeping well, so that they may be used at the proper time; for the finest Pears become insipid if allowed to get over-ripe before being used, and the same may be said of many varieties of Apples. Any of the choice kinds of Pears that do not appear to ripen properly in the fruit-room will be improved by being removed to a warm dry room for a few days. Keep the fruit as cool and dry as possible. If frost is excluded it can hardly be too cool to preserve the fruit plump and sound as long as possible.

STOVE.

Keep the atmosphere rather moist, especially if the weather is bright, and remove such plants as are inclined to start into growth to the warmest part of the house. Above all things look out sharply for the scale, mealy bug, and thrips, and wage incessant war against them at all points. Some plants, such as Stephanotis, Allamandas, Manettias, Dipladenias, &c., may be pruned, trained, and started—if by a gentle heat all the better; but those plants for late blooming to be kep back for the [illegible]

side branches shortened in a little, and to be placed in heat to produce cuttings for propagation.

GREENHOUSE AND CONSERVATORY.

The weather of late has been so favourable for plants that many of them are growing rather too freely. As this young growth is tender, abundance of air must be given, and great precaution taken to guard against frost, which, like a thief in the night, steals in, and would do an irreparable injury to the young wood in its present state. While at the same time that you guard against frost, it is also advisable to avoid overheating the houses by giving all the air possible at favourable opportunities. Water to be given cautiously, and in the morning; but care to be taken not to allow any plant to suffer for want of it. Pelargoniums intended for blooming in May to be shifted into their blooming-pots. Late-blooming plants to be stopped preparatory to potting them off about the end of February. The young stock to be encouraged to get them strong and healthy. Cinerarias and herbaceous Calceolarias grow best in a warm, moist, airy pit. All such plants as require it to be shifted into light rich soil. Fumigate slightly every ten days or a fortnight; but be very careful not to injure the leaves; water when necessary, but not over the foliage. Take care that the Camellias do not suffer for the want of water now they are blooming. Prune, train, and clean the climbers on the rafters, &c.

FORCING-PIT.

This structure will now be kept in full activity to supply the various calls for plants in bloom, which at this season of the year are generally in demand in most places. Care to be taken before plants are removed to sitting-rooms to gradually harden them off for a day or two either by placing them in a greenhouse or any other intermediate-house. Maintain a fresh, growing, moist temperature of from 60° to 65°, or 70° with sun heat. Syringe early on sunny days, and keep a moist atmosphere, unless the weather is very dull.

PITS AND FRAMES.

Plants of a succulent nature will require much attention during damp foggy weather. Geraniums, Verbenas, and Calceolarias are very liable to become damp and mouldy. Remove all mouldy leaves as soon as they are seen, or they will be certain to infect others, and then spread over the whole stock. It is sometimes advisable, when plants are affected with damp and no means at command to correct it, to move them to other quarters, where a drier temperature is kept. Avoid watering here as much as possible; it is better to let the plants flag a little than to have them saturated at the root. To keep plants in first-rate condition the requisites are a limited supply of water, abundance of light, free circulation of air, and a dry atmosphere. If a sharp frost should set in, and plants have been excluded from the light and air even for a few days, they must not be too suddenly exposed, especially to cold easterly or northerly winds, but should be gradually inured to free exposure.

W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Much the same as last week, with the exception of putting more Sea-kale and Rhubarb in the heat of the Mushroom-house, earthing a bed in the latter, and packing some tree leaves round the frame of the Asparagus-bed, which though put in late, gave us a nice dish on Christmas-day. The Sea-kale and Rhubarb first put in heat have produced well. Cauliflower under protection is excellent, and Snow's Broccoli is beginning to heart in the open ground. Will place some litter beside it ready to throw over it in an emergency. Made up a bed of leaves for a two-light box, on which to place earth and sow Early Horn Carrots, with a sprinkling of early frame Radishes, which will come in to succeed the Radish-box. Radishes are still good out of doors, having received a little protection in frost. The bed will produce in a fortnight. Endive covered over with a little stubble is now in fine order, and along with a little Lettuce, Beetroot, and Celery, makes a nice Salad.

FRUIT TREES, &C.

Much the same as previous weeks. Placed more Strawberries in Vine-pits, and also a row on the high shelf of the Peach-house where they will be free from frost, and come on slowly, the house now being crammed with bedding plants, which must be [illegible] before [illegible] begin forcing. Damped the Vines in pits [illegible] warm days, to soften the buds. Laying them close to the ground keeps a moist vapour about them. I do not think that direct light is of much consequence before the buds swell; as soon as they approach bursting-point light and air are essential.

FLOWER DEPARTMENT.

Cleared the most of Chrysanthemums from flower-house, and replaced with other things in bloom. Picked off all decaying leaves and fading flowers. Gave plenty of water to Cinerarias just coming into bloom. As the flower-house is kept at a low temperature, Primulas, Cinerarias, Daphnes, Cytisus, and Camellias, are the chief things in bloom. To have a house gay at this season the temperature should average 50°, whilst ours will scarcely average 40°. Bulbs and other forced flowers should be gradually hardened before going into a house ranging even from 45° to 50°. In such open weather, *Violets*, and all sorts of bedding plants should receive all the air possible, and have every decayed leaf and mouldy part taken off close to the fresh stem. If the Violets are in a frame it is a good thing to wash the boards inside with sulphur and soft soap. If in a pit do the walls the same. If a little mildew appears on a leaf it is best to nip it off; but if numbers are affected, it will be best to dust the leaves with fine sulphur by means of a fine hair brush. The sulphuring the walls and boards will be a good preventive.

PLANT-STOVES.

Such plants as Ixoras, even if plunged in a hotbed, will be all the better if placed close to the glass, that the points of the shoots may be well hardened to assist in setting the flower-buds. All the light possible in such houses will now be advisable; and therefore such plants as Ipomœas, and Passion-Flowers as quadrangularis, should be pruned pretty close back to the wood of last year in established plants, leaving a good bud or two as in Vine spur-pruning, as from these buds the flowering-shoots of the following summer will come. Old established plants of Allamandas, Stephanotis, &c., may be pruned much in the same way; but younger plants with fine ripened shoots, but not nearly thick enough to cover their trellises, may have these shoots trained fully three parts of their length round a trellis —and if these shoots are well ripened, the bending will cause every bud to break and produce its flowering-shoot. The plants should be dry rather than moist before pruning. A few days afterwards the soil may be watered or even top-dressed, and that may be all that is desirable; but if fresh potting is resolved upon, it had better be done after the buds are breaking. The turfy loam and heath soil used should be aired and warmed, that the roots may receive no check by coming in contact with cold soil. In dull wet days cut down some large plants of Adiantums, as cuneatum, &c., and top-dressed the pots, in order that the fronds might be all fresh and green in spring and summer. Potted younger ones, fresh-dressed Orchids, and gave a little water to those sufficiently rested. This dull season is not the best for such potting; but a temporary potting-board may be fixed in a house, soil heated and all made comfortable, and many things done now that would stand a poor chance of being attended to in spring, when we could use every pair of hands if increased threefold, and find no fault with more.

PLEASURE GROUNDS.

For cold pits see last week. The day before Christmas-eve was charming, telling of frost at night. Christmas-day equally delightful, enough to fill every heart with gratitude—and with rejoicing, too, but for the heavy bereavement the Queen and Royal Family, and the nation at large, have sustained in the removal of a Prince whose name was never mentioned prominently but in connection with what is noble and elevating, being equally at home directing the councils of the learned men of the age, and in devising model cottages, and inculcating thrift, industry, intelligence, and practical piety for promoting the happiness of the labouring population. Would that many, besides stalwart sons and blooming daughters, would deem it a sacred duty to imitate his example. These fine days enabled us to clear the pleasure grounds of leaves and all fading flowers, to sweep and roll the grass and walks, to render them somewhat in accordance with such a glorious Christmas-day. The very brightness of the day would lead us to hope that it might be a good omen, that the dark cloud gathering between us and brothers across the water might be thoroughly dissipated, and that at home many a sad lonely heart would be gladdened by the proofs of kind and generous sympathy.—R. F.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Vines in Greenhouse (*Robin Hood*).—We think for a greenhouse 16 feet long four Vines would suit best, one 2 feet from each end, and then the four would be 4 feet from each other. These might be two Black Hamburghs and two Royal Muscadines. Or, if you wished the Grapes to hang long, one Hamburgh and one Lady Downes' or St. Peter's, and one Muscadine, and one Raisin de Calabash. The time of planting may be just when it suits best. It may be done now if you protect the roots from cold and wet. They will be growing slowly all the winter, if the soil is moderately warm.

Waltonian Case (*W. E. C.*).—We see nothing wrong in the idea of your Waltonian Case, though if sizes and means of management had been given, we might have judged better. If you cannot make your case cheaper by far than the true Waltonian, you might as well have one at once. We would have some inches of sand over the boiler before setting the pots on it; and we should prefer one of Miss Maling's In-door Plant Cases. There has been more flower gardening in this Journal than in any other work of the day; but if you require more about florists' flowers we recommend you to order "The Florist and Pomologist."

Old Apple and Pear Trees Severely Pruned (*A Subscriber*).—In order to encourage the lower new formed shoots, you must not let the top have too much lead again. These new shoots must be thin enough to let sun and air play upon them. We would now merely shorten the points a little. If you had thinned them out and nipped out the points in June, flower-buds might have been formed on them now near the base. These most likely will be formed next summer. One next summer can be chosen for leader, the rest stopped to 3 inches or 4 inches, and the leader stopped at a foot or 15 inches. This will give you nice young wood supplied with fruit-buds.

Climbers for House Front (*F. Fane*).—We have repeatedly stated we could not say what kinds of plants to recommend for planting where the country or part of it is not told us. Just consider if you were living at Torquay, or at Cromarty, how very different the kinds of plants for your wall must needs be. Anywhere, however, a border 9 inches wide will do for no kinds of climbers whatever. The pavement might not be so injurious as it would seem if the ground under it had been trenched, and the plants had a fair start before the pavement was laid down.

Selaginella Damping off (*Subscriber*).—From the mere fragments sent dried up in blotting-paper, instead of being packed in oil-skin, in which they would have come fresh to hand, we are only enabled to say the plant is some very small kind of Lycopodium, allied to apodum if not that kind. The damping-off is explained by the place being 10° or 20° too low in temperature for it; or else it is too much confined for want of air. All these Lycopods, and the tree-like Lycopods, called also Selaginellas, will live and thrive amazingly in a dripping-wet atmosphere if the temperature is sufficiently high for them: thus one of them and most of them should now, however, be in a dryish atmosphere of from 50° to 60°; if the delicate ones are in a lower temperature the least moisture will damp them.

Brompton Stocks (*Kingsdown*).—If they were ours we should throw away the ill-used stocks, they will never do you or your seedsman any credit. The next best thing would be to plunge the pots close to the south wall of your house, and have a board ready to put over them to keep off the rain and much of the frost, and to plant them out at the end of March.

Liliputian Cacti, &c. (*W. M.*).—There is no work, that we are aware of, upon the culture and propagation of the Liliputian Cacti; nor do we know who raises them for the retailers. We do not know any one who has grown Maclean's Advancer Pea. The common Advancer Pea is a wrinkled blue-seeded variety, very good, and ranks among the second earlies. The Waltonian Plant Case is described and figured in No. 369 of The Cottage Gardener. The papers we are now publishing will teach how to manage plants in such "In-door Cases."

Tomatoes for Preserving (*H. Pugh*).—The best for preserving we think is the Cherry-shaped (Lycopersicum cerasiforme); but you can have varieties of the common Tomato of various forms and colours. They are red, yellow, and white-fruited; Melon-shaped, Pear-shaped, &c. If you write to any large seedsman in London, telling him what you require he would supply you.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE POULTRY WORLD IN 1861.

We believe that most men are lazy, and that all men in some things or others are procrastinators. We are. Even in our trifling case there are times when our work seems to accumulate, and as one child said to the other, "The more you call the more I won't come," so the heavier our load the less we seem disposed to pluck up courage, and to lighten it. No one ever yet intended to commit an extravagance that he did not justify it on the score of economy; and we never defer work without being able to prove, at least to our own satisfaction, that somehow or other benefit will result from the delay. All these things are deceit, and the labour is the same; there is the same expenditure of labour, but it is compressed into a shorter period of time. Many who read this will understand us when we say *the safety valve is weighted.*

Did you ever notice the real difference between men going to the same market and driving themselves? One flits past at the utmost pace of a fast horse, still urging him. His face is flushed, his horse reeks, but when he reaches the Crown and refers to his watch he will be able to say he has accomplished the distance in a very short time, and had on getting there more than half an hour to spare. His neighbour will drive steadily, will start at the same time, and arrive five minutes before market opens. He will have spared his own resources, and those of his horse, while accomplishing all that is necessary.

The connection between time and our present subject has somewhat forced these reflections upon us. This Number appears on the last day of the year, and it will be in few of our subscribers' hands till 1861 has become a matter of history, and a thing of the past, while 1862 has entered into being, untried it is true, but bursting with hope. It is an annual duty to exchange good wishes, and mutual expressions of respect with all our friends, and our task is made easy by the fact that we believe we have none but friends among all those with whom our vocation brings us in contact. We can heartily say we wish for no others, and that we never pen a line or utter a word we would not willingly recall, if we thought it would pain any to whom it was addressed, or into whose hands it fell.

We cannot, especially at the present time, refrain from saying our first feeling is one of gratitude that we are again permitted to begin another year. We "look askew" at those who say at forty they feel as young as they did at thirty. It is only when they feel the approaches of age that they say so. It is some years since we addressed many of our present readers, and while we admit we are older, and know it, we are glad and thankful to say that to the support of our friends and subscribers we are indebted for being able to record 1861 among prosperous years. Such are lighter to bear than troublous ones.

Viewing Poultry in its relation to exhibitions we have to record an increase in its number of shows, a great stir in towns where they were formerly held, but have been discontinued; and the fulfilment of our predictions that the large shows would increase. Everything speaks not only of the continuance but the progress of the movement. There has been an immense stride in Poultry as it applies to food, and men who care nothing for it as a pursuit, are turning their thoughts to it as an adjunct in feeding people. The great want is statistics; we are behind all our continental neighbours in this matter, and it will be only when people can see on irrefragable evidence how much Poultry does, that they will begin to believe how much it can do. The prizes have again been scattered abroad as during the last two or three years. The love of the pursuit is like the dragon's teeth, and hence new names spring up on the prize list. For one that disappears twenty come into notice. It has been said nothing remains stationary, and we believe it. Different classes vary in the estimation of the public, and are now higher, now lower. They would seem to depend on the public for their excellence. They increase in perfection and good quality, just as they are at the top of the public scale or lower. Certain classes seem to depend also on certain men whose countenance would appear to be necessary for the well-being of a breed.

Dorkings have throughout been excellent, not only in size but in health, feathers, and condition. We cannot mark much increase in weight, but it is impossible to go on continually adding to bulk. That which has been accomplished is no trifle, and it has not cost one point of symmetry. Spanish have barely held their own in quality, but their entries have been satisfactory. Cochin-Chinas, in every class but White, have greatly advanced. The Buffs are as good, and the Grouse are better than we ever saw them at any time. Brahma Pootras progress steadily, the world is becoming convinced of their merits, and they now demand a class everywhere. The Hamburghs prosper. The Golden-pencilled and spangled are perfect; the Silver-spangled very good; while the Silver-pencilled have room for improvement. However numerous they might be, Polands could not improve in quali- [illegible] their classes are not self-supporting [illegible] lack of entries. We can only say of the Game that we can suggest no improvement.

Bantams may boast of their progress. In number and quality they are shows in themselves. The Golden are excellent; the Silver very much improved; the Black, White, and Game nearly perfect.

Ducks of every breed, Geese, and Turkeys maintain their weights. Rouens are faultless in colour, and the Buenos Aryeans have moved from Brobdignag to Liliput.

The principal novelty in the various class has been the regular exhibition of Crève Cœurs. Should it continue, they may ask for a class. It is worth suggesting to those who have the management of these things, that a class does not necessitate three or even two prizes; one will test the merits and capabilities of a breed.

Our report is "couleur de rose. We have sailed in safety, and things have gone smoothly with us. We offer our best thanks to subscribers, contributors, and all friends, to whom we feel we owe, that we can make this gratifying avowal. May it be the same with them all. It is especially matter of sincere pleasure to us that we can fill our columns, without encouraging discussion in order to supply our readers with highly-spiced personal ragoûts. We are proud to avow, that in this respect we are for peace above all.

Grateful for the past, we hope for the future. We would that every one should share in light and cheerful anticipations, and therefore wish to all whom this sheet shall reach

"A HAPPY AND PROSPEROUS NEW YEAR."

FEATHERS OF SILVER-SPANGLED HAMBURGH HEN CHANGED IN THEIR MARKINGS.

I HAVE a capital Silver-spangled Hamburgh hen. She began to lay this day (December 23rd) twelvemonth, and between that time and the middle of October produced 240 eggs. She then moulted. I now see that her tail and wings (or flights rather) are perfectly white; the breast is decidedly marked, but the spots too small; the body cloudy or mottled with very small spots. Now, as her eggs have produced some exceedingly good chickens, and I have obtained a prize cockerel on purpose to get another strain, considering her imperfect markings, would it be worth while to risk chickens from her eggs, or safer to raise them, for the ensuing season, from her pullets, which have just begun to lay?—PULLARIUS.

[As you say the hen in question has bred you very good chickens, and you have now bought a prize cock to cross with, we recommend you to put him (being a chicken) to the hen. It is common to many, we may say to most breeds, to fade in colour and to increase in whiteness at each succeeding moult after they become aged. You may give up the barley, potatoes, and wheat in your poultry diet if you will give ground oats and the scraps from the table.]

FEEDING POULTRY.

AT this time of the year, and long before this, when the days begin to get short, I feed but twice a-day—at nine o'clock in the morning, and two o'clock in the day. At morning they have as much barley as they like to pick up, and at mid-day they have a mixture of boiled potatoes and the scraps from the house, and barley, pea, or bean meal, whichever may be the cheapest or most come-at-able, sometimes ground oats, and when potatoes are getting short in the spring, I add brewer's grains.

Now, all or any of this sort of food does first-rate for store fowls, and I never saw any marked difference, have which sort they may, and the quantity of meal to be used is just as much as will keep the fowls from scouring. Keep an eye to that, and that is the surest guide, and if the house scraps should contain much bread, less meal will do. When the days begin to get light at six in the morning, then I feed at eight in the morning, one in the day, and again at roosting time; giving barley morning and evening, and the hotchpotch, as I call it, at mid-day. This meal I let them eat till they cannot get one bit more down, and I ascertain exactly the quantity of barley they will pick up at that time of the year. Then I have something to measure that quantity; then if I cannot stop to watch them eating I can [illegible] about and over them [illegible] it [illegible] the [illegible] till the [illegible] begin to get longer, they get up earlier, and they get more food in the fields. Then the first morning I see they do not pick their barley up quite clean I at once shorten their allowance, both morning and evening, and they come without calling to every meal, as true to time as I do myself; and although in the very long days their evening meal is, as it were, only the name of the thing, as they scarcely care to pick up a dozen corns a-piece, they will not go to bed happy till they have had it.

I should have stated that I keep curtailing their barley as I see it necessary, but more so in the evening than the morning. I feed extra at moulting time. Their walk affords all other requisites, and by this treatment my fowls are always in excellent health and plumage, and in first-rate laying condition, and always fit to pick up off the walk in good, sound, fleshy condition for table. I have a good warm shed for them to roost and lay in, but the greater part of them roost out in a tree close by, and they that are in-doors can go out as early as they please, and they that roost out in all weathers are equal in all respects to those that roost in-doors.

I know plenty of people that have good fowl-houses lock their fowls up in the warm every night, and feed pretty regularly, and have good runs in the bargain, and give their fowls three times the corn that I give mine, and these do not lay in comparison with mine, or do so well in any way, and they wonder how it is; and it is simply this—they are a people that call themselves poultry fanciers that have sprung up within a few years, and some only months as it were, they talk over their management to each other when they meet, and every one thinks his or her plan the best. They buy a poultry-book, and as they do not think to make observations about the habit of the fowl or the situation they are in, many go directly opposite to what the book states. Picture these fanciers' fowls being let out of their house at eight o'clock on a summer's morning, and mine that had hopped out of a tree at four, and come home to breakfast at eight!—WORCESTER.

ROYAL DUBLIN SOCIETY'S POULTRY SHOW

DECEMBER 17TH AND 18TH.

THE show of poultry was very good, the several varieties being well represented in numbers as well as perfection in the specimens. The mature *Dorkings* numbered thirteen lots, and all fit creditably to compete in any show. The first prize was taken by a very fine lot recently brought from England, and we learned competed successfully at the late Birmingham Show. It is to be regretted that the pens are so inconveniently made—the opening being at the back—that it is almost impossible to give a critical judgment, as, where competition is so close, weight must decide the point; many birds looking very large, which, when put into the scale, do not answer the expectation. The Dorkings under a year mustered nineteen lots, more interesting than the adults, as showing the result of the breeders' care bestowed upon them, and, as might be expected, the contest was a close one. We could not, however, agree in the award of first prize to lot 22, the Countess of Bective, the birds being too small and the pullets not accurately matched. The second birds reared by Mr. Williams being much superior. Mrs. Farrell's highly commended birds were also very fine. The *Spanish* classes, both old and young, did not show to such perfection as the other breeds, the season being a late one for moulting, so that the birds had not recovered, as was shown in the general want of brilliancy of the combs and wattles, the delicate whiteness of the face, and fulness of tail. Making allowance for this, the show was a good one. The *Cochin-China* class had not many representatives, but the birds were good. The *Game* class had but few champions to support the cause, and one or two lots, we believe, were disqualified, although separately good birds, because the legs were of different colours.

There was a particularly fine array of the crested breeds, which attracted much attention, both from the size of the crests and the beautiful markings of the birds. The White-crested Black birds were very fine, and reflected great credit on the successful exhibitor, Miss Drevar, who took all the prizes. The class for any other distinct breed contained some beautiful birds of the Silver and Gold-mooned *Pheasants*, and divided the prizes between them. These breeds, the pride of Lancashire and Yorkshire, are not sufficiently appreciated in Ireland, as well for their beauty as productiveness. The *Turkeys* were very fine, particularly a pen of Cambridgeshire birds belonging to Mr. Joseph Tuite, as well as a lot of ten young cocks (American), all of which, we believe, were soon claimed. The double-breasted pied Norfolk Turkeys shown by Mr. D. Campion, Mount Vernon, were also particularly fine. They took our attention, from their elegant appearance, their compactness, and freedom from offal; their flesh is also beautifully white, and they are a very domestic description of bird.

The *Geese* had immense birds to represent the class, among them a pair of Canada Geese, which were greatly admired, and, no doubt, can be easily domesticated, and as they weigh as much as 20 lbs., deserve attention.

The Rouen *Ducks* were all very superior, and as they competed with Aylesbury, showed their superiority by taking all the prizes and commendations. Considerable discussion took place in the awards in this class, as the birds were not weighed, and much difference of opinion existed as to minute points in competition—viz., the marking of the bills, &c.; but we believe the morning was so dark that any slight mistakes, owing to such a cause, should be overlooked where the judgment was generally so good.

DORKING.—First, R. W. Boyle, Rosemount, Dundrum. Second, Countess of Bective, the Lodge, Virginia, county Cavan; R. P. Williams, Hollybrook, Clontarf; Mrs. Lugton, 4, Banna View. *Chickens.*—First, Countess of Bective. Second, R. P. Williams, Clontarf. Highly Commended, Mrs. Farrell, Moynalty. Commended, R. P. Williams, Clontarf.

SPANISH.—Prize, R. P. Williams. *Chickens.*—First, E. J. Smith, jun., 31, Rutland Square. Second, R. P. Williams. Commended, Miss E. de Courcy Drevar, Blackrock; J. Forrest, Roebuck House, Dublin.

COCHIN-CHINA.—First, R. P. Williams. Second, Countess of Bective. *Chickens.*—First, Countess of Bective. Second, R. W. Boyle, Rosemount, Dundrum.

GAME.—First, R. W. Colgan, Blackrock. (Second withheld.) *Chickens.*—Prize, W. Colgan, Blackrock.

HAMBURGH (Spangled).—First, R. P. Williams. Second, R. W. Boyle, Dundrum. Highly Commended, R. P. Williams. *Chickens.*—First, R. P. Williams. (Second withheld.)

WHITE-CRESTED BLACK FOWL.—First and Second, Miss E. de Courcy Drevar, Blackrock. *Chickens.*—First and Second, Miss E. de Courcy Drevar.

ANY OTHER DISTINCT BREED.—First, J. Lafarelle, the Grange, Stillogran. Second, R. P. Williams. Highly Commended, J. Lafarelle; R. P. Williams.

CHICKENS (Six, of any breed).—First, R. P. Williams. Second, Mrs. M. Delaney, Castleknock.

CHICKENS (of any breed).—First, R. P. Williams, Hollybrook. (Second withheld.)

TURKEYS.—Second, J. Lentaign. (First withheld.)

TURKEYS (Tallaght).—First and Second, J. Tuite, Mullingar. Second, J. Hayland, 30, North Anne Street.

GEESE.—First, R. W. Boyle, Dundrum. Second, J. Tuite, Mullingar.

DUCKS.—First, R. W. Boyle. Second, H. M. Barton, 4, Harcourt Terrace. Highly Commended, R. P. Williams, Clontarf; R. W. Boyle, Dundrum. Commended, R. P. Williams.

LOT OF TEN DUCKS.—First, R. P. Williams, Clontarf. Second. J. Hyland, 30, North Anne Street. Highly Commended, Mrs H. Rathmines.—(*Irish Farmer's Gazette.*)

HALIFAX FANCY PIGEON ASSOCIATION.

ON the 20th and 21st, the fourth Show of the Halifax Fancy Pigeon Association was held at the Mechanics' Hall, and both in the number and quality of the birds exhibited was decidedly in advance of that of any previous year. There was an encouraging increase in the number of local exhibitors, and these were Messrs. W. Smith, S. Shaw (Stainland), W. Kelsey, J. Sunderland, jun., E. Drake, J. Bairstow, J. Wadsworth, A. Graydon, G. Hebblethwaite, J. Firth, E. Parry, and S. Thompson. That this Show is regarded with favour elsewhere we have satisfactory proof in the fact that exhibitors attended from the following places:—Forest Hill, Staleybridge, Glossop, Bradford, Newcastle-on-Tyne, Birmingham, Whitehaven, Nottingham, Sheffield, Burnley, Huddersfield, London, Manchester, Liverpool, Gateshead, Lanark, Beverley, Rochdale, Newark, Axminster, Dundee, and Glasgow. There were 413 pens, and specimens of some rare breeds exhibited.

In *Powters*, Mr. Wm. Smith was highly successful, carrying off the first prizes in Yellow hens, and Dun or Mealy cocks, and the second prizes in three other classes, while he was highly commended in a fourth. He was also the winner of a silver medal, value £2, given by Mr. George Ure, Dundee, for the best pair of Powter cocks or hens of any colour, bred in 1861. In Mr. Peter Eden, of Salford, however, he found a formidable competitor, who carried off the first prize in six different classes, and second prizes in three other classes, while in others he was highly commended. Mr. Geo. Ure, of Dundee, carried off first prizes in four classes, the second prizes in two classes, while in another he was highly commended. The collection was in every respect a magnificent one and excited much attention. A Mealy hen belonging to Mr. Ridpeth, of Manchester, was much admired for its length of body and admirable shape.

In *Carriers*, the most remarkable show was that of Dun cocks, there being seven entries, five of which were noticed, Mr. Thos. Colley, of Sheffield, taking the first prize, and Mr. John Bairstow, of Halifax, the second. In the several classes of Carriers, Mr. Bairstow carried off three first prizes, five second prizes, and in eight cases he was highly commended. Mr. Peter Eden, however, carried off the silver medal, value £2, given by Mr. Matthew Stuart, of Glasgow, for the best pair of Carriers, Dun or Black cocks, and bred in 1861. In this class, the competition was exceedingly keen.

In Almond *Tumblers*, Mr. Eden also carried off the silver medal, value £3, given by Lord Binning, for the best pair; Mr. Matthew Stuart, of Glasgow, winning the silver medal, value £2, given by Mr. James Huie, of Glasgow, for the second best pair. Mr. Samuel Shaw, of Stainland, carried off four second prizes. In Kites or Self-colours there were two admirable hens, both shown by Mr. George Fawdon, of Gateshead, and they were much noticed. The show of Common Tumblers was not very numerous, but they were all of an excellent quality.

The *Jacobins* comprised some of the best birds ever exhibited, Mr. Shaw, of Stainland, carrying off the first prize with Reds.

The *Turbits* were an interesting class; and Mr. Shaw won the silver cup, value £5, given by Mr. W. Wicking, of London, for the best three pairs, subject to his birds being sold for £5 if claimed. The pairs were Black, Blue, and Red, and they were of such an admirable quality that there were several claimants for them.

The Show in other breeds possessed no features calling for special mention save the *Trumpeters*, except that the first prize was awarded to Mr. Shaw's Black Mottles, which have figured conspicuously at all the exhibitions in the kingdom, and have won a little fortune in prizes. These are also the same birds from which Mr. Wolstenholme painted his picture of "The Trumpeter."

The *Dragons* were an unusually large collection, and in the class for "variety" there were some specimens of rare excellence —in fact, such a class as has seldom been brought together. Amongst the most noticeable of these were a pair of "Wonga-Wongas," imported from Australia, and a pair of Laced Fantails.

The Show is, without doubt, the most successful of any that has yet been held in England, and its success is owing mainly to the unanimous working of the Committee, each member having laboured heartily to give to the Show the utmost *éclat* possible.

The following is the list of prizes awarded:—

Powters.—*Blue Cock.*—First, P. Eden, Salford. Second, W. Smith, Halifax. Highly Commended, S. Shaw, Stainland. *Blue Hen.*—First, P. Eden, Salford. Second, W. Smith, Halifax. Commended, W. Taylor, Sheffield.—*Black Cock.*—First, G. Ure, Dundee. Second, W. Smith, Halifax. *Black Hen.*—First, G. Ure, Dundee. Second, J. Huie, Glasgow. Highly Commended, J. H. Frame, Lanark. *Red Cock.*—First and Second, G. Ure, Dundee. Highly Commended, P. Eden, Salford; W. Smith, Halifax. *Red Hen.*—First, G. Ure, Dundee. Second, J. Sunderland, jun., Halifax. Highly Commended, J. Smith, Sheffield. *Yellow Cock.*—First and Second, P. Eden, Salford. *Yellow Hen.*—First, W. Smith, Halifax. Second, P. Eden, Salford. Highly Commended, H. Brown, Sheffield; J. Huie, Glasgow. *White Cock.*—First and Second, P. Eden, Salford. Highly Commended, W. Kelsey, Halifax. *White Hen.*—First, P. Eden, Salford, Second, G. Ure, Dundee. Highly Commended, G. Ure, Dundee; P. Eden, Salford; S. Robson, Milford Junction; W. Kelsey, Halifax. (An excellent class.) *Dun or Mealy Cock.*—First, W. Smith, Halifax. Second, J. Huie, Glasgow. Very Highly Commended, — Stuart, Glasgow. Highly Commended, W. H. Tegetmeier, London; T. Ridpeth, Manchester. *Dun or Mealy Hen.*—First, T. Ridpeth, Manchester. Second, H. Brown, Sheffield. Highly Commended, C. J. Samuels, Manchester. *Any Colour.*—Medal, W. Smith, Halifax (White). Highly Commended, M. Stuart, Glasgow.

Carriers.—*Black Cock.*—First, F. G. Stevens, Axminster. Second, J. Bairstow, Halifax. Highly Commended, P. Eden, Salford; J. Wadsworth, Halifax; J. Bairstow, Halifax. *Black Hen.*—First, P. Eden, Salford. Second, J. Wadsworth, Halifax. Highly Commended, J. Deakin, Sheffield; A. Evans, Salford. *Dun Cock.*—First, T. Colley, Sheffield. Second, P. Eden, Salford. Highly Commended, A. Evans, Salford; J. Bairstow, Halifax; A. L. Silvester, Birmingham. *Dun Hen.*—First, P. Eden, Salford. Second, T. Colley, Sheffield. Highly Commended, J. Bairstow, Halifax. *Blue Cock.*—First, J. Bairstow, Halifax. Second, T. Colley, Sheffield. Highly Commended, J. Bairstow, Halifax. *Blue Hen.*—First, T. Colley, Sheffield. Second, J. Bairstow, Halifax. Highly Commended, J. Bairstow, Halifax. *White Cock.*—First and Second, J. Bairstow, Halifax. *White Hen.*—First and Second, J. Bairstow, Halifax. *Black* or *Dun.*—Silver Medal and Third, P. Eden, Salford. Second, J. Bairstow, Halifax. Highly Commended, H. Smith, Skipton (Dun); J. Deakin, Sheffield (Dun); T. Colley, Sheffield.

Almond Tumblers.—First Medal and Third, P. Eden, Salford. Second Medal, M. Stuart, Glasgow.

Short-faced Tumblers (Mottles).—First, F. E. Else, London. Second, S. Shaw, Stainland.

Short-faced Tumblers (Beards).—First, T. Hives, Nottingham. Second, S. Shaw, Stainland. Highly Commended, J. W. George, Nottingham; F. Archer, jun., London (Blue

Short-faced Tumblers (Balds).—First and Second, S. Shaw, Stainland.

Short-faced Tumblers (Kites, or Self-colours).—First, E. T. Archer, London. Second, S. Stott, Rochdale (Red Agates).

Common Tumblers (Mottles).—First, M. L. Fearnside, Huddersfield. Second, W. F. Entwistle, Bradford (Black).

Common Tumblers (Balds).—First, J. Sephton, Prescot. Second, S. Stott, Rochdale (Blue).

Common Tumblers (Beards).—First, H. Beldon, Bradford. Second, A. Graydon, Halifax.

Common Tumblers (Self-colour).—First, P. H. Jones, London. Second, S. Shaw, Stainland.

Jacobins.—First, S. Shaw, Stainland. Second, J. T. Lawrence, Liverpool. Highly Commended, J. T. Lawrence.

Turbits.—First, T. T. Parker, Chorley. Second, E. A. Hargrove, Birmingham. Highly Commended, W. F. Entwistle, Bradford. Cup, S. Shaw, Stainland.

Barbs.—First, J. H. Frame, Lanark. Second, S. Shaw, Stainland.

Owls.—First, T. Ridpeth, Manchester. Second, H. Morris, London. Highly Commended, F. E. Else, London; J. Percival, London.

Fantails.—*Cocks.*—First, W. Taylor, Sheffield. Second, T. Ridpeth, Manchester. Highly Commended, W. Vaughan, Middlesbro'-on-Tees (White); E. Smith, Birmingham; J. W. Edge, Birmingham. *Hens.*—First, J. Huie, Glasgow. Second, G. Goore, Liverpool. Highly Commended, E. Smith, Birmingham; J. W. Edge, Birmingham; H. Morris, London; F. G. Stevens, Axminster.

Trumpeters.—First, S. Shaw, Stainland. Second, W. H. C. Oates, Besthorpe, Newark. Highly Commended, S. Shaw.

Runts.—First and Second, H. Key, Beverley.

Nuns.—First. S. Shaw, Stainland. Second, J. C. Brierly, Nottingham.

Magpies.—First, S. Briggs, Holywell Green. Second, C. J. Samuels, Manchester.

Swallows.—First and Second, S. Shaw, Stainland.

Dragons.—First, E. Parry, Halifax. Second, J. Wadsworth, Halifax (Blue).

Any Variety.—First, Second, and Fifth, S. Shaw, Stainland (Spots, Russians, Shields). Third, E. A. Hargrove, Birmingham. Fourth, A. Evans, Salford (Hyacinths). Highly Commended, G. Ure, Dundee; A. G. Brooke, St. Bees.

Judges.—Mr. James Millar, Camlachie, Glasgow; Mr. T. J. Charlton, Stanley, near Wakefield; and Mr. Thompson, St. Ann's, Southowram.—(*Halifax Courier.*)

MANCHESTER EXHIBITION OF DOMESTIC POULTRY.

December 26th—28th.

For some years past Manchester has not held the position so densely populated a neighbourhood ought certainly to do in connection with our poultry shows. It appears that some seven or eight years back a number of poultry exhibitions took place at the Free Trade Hall, Manchester. As a whole they were well attended, and excited no small share of both local and public interest. As, however, from the dilapidations caused by the lapse of time, the authorities deemed it far more expedient to erect an entirely new building on the site of the old Hall than waste money on the never-ending repairs of the one then existant, it was taken down altogether, and from that time to the present no poultry show immediately connected with Manchester has taken place.

Perceiving how much attraction such meetings caused with the public, Mr. Jennison, the spirited proprietor of the Belle Vue Zoological Gardens, situate only about two miles from the centre of Manchester, determined to hold an "inaugural meeting" on the just-passed 26th December, and two following days, also to carry out those exhibitions annually for the future. With the determination, if possible, to give the same a popular commencement, not only was a very liberal prize list offered by its projector, but the hitherto unknown proffer of all the receipts derived from entrance-money, was guaranteed as an addition to the published premiums for those who might prove the successful ones. The sum thus added was not by any means a trifling one, as the entrance per pen was affixed at half-a-sovereign. We must say, from personal knowledge, the funds thus derivable were to a farthing scrupulously added to the premiums. To by far the greater proportion of our readers the permanency of such an arrangement seemed more than problematical, and we confess it did appear an enigma even to ourselves, how such regulations could possibly be compatible with the supply of means for refunding the very considerable amount of outlay ever resulting from the efficient carrying out of such meetings. The explanation proved, however, more satisfactory than was anticipated. Belle Vue Gardens are devoted not only to the purposes of a very considerable collection of living zoological specimens, but also contain a somewhat extensive and very interesting museum, together with the most extended arrangements for boating, dancing, &c. The establishment also enjoys a large printing-office, for the publishing of its programmes of entertainment, employing a number of men (never idle) in this particular department, whilst, again, even the gas is all made on the premises for the exclusive use of this place of entertainment. Being for home consumption only, of course expense is held altogether subservient to quality, and certainly not a few of our public gas companies would do well to take a lesson, as respects, of the gas manufactured at the Belle Vue Gardens. It is remarkable for its cleanliness and purity under combustion.

But to return to the entrance-monies being given up *in toto* as a division to the successful exhibitors, instead, as at other shows, being the means of providing the customary funds for payment of the prizes. Mr. Jennison, on the contrary, determined to pay his proffered premiums out of the admission-money received from visitors, combined with the no trifling amount that might arise from the sale among so many of an aggregate of refreshment, that to specify would appear (to all) as completely fabulous. This feature in the fresh idea of a poultry show is evidently quite inapplicable to our general meetings of like nature, held under customary contingencies, but at Belle Vue it proved the very opposite of a failure in a pecuniary view. The extraordinary value of the prizes, however, no doubt tended greatly to dishearten the great amount of general entries in the respective classes, as an entrance fee of 10s. per pen, with carriage to and fro as extras, prevented many men from entering the lists at all, where they naturally enough supposed that their chance of winning was a very remote one. From this cause only the entries proved barely four hundred pens. Arising on this surmise, the competition in some few classes was very trifling indeed; and in others, strange enough—although only in a case or two—all the specimens exhibited were much below par. As to the Exhibition as a whole, perhaps there never has been one where all the poultry came so truly to their pens, hardly any coops being vacant, or as an exhibitor said—"Ten shillings entry is too much to pay without you purpose really sending them, for few would willingly throw away half-sovereigns."

A new arrangement was here instituted—viz., to send direction-labels for the hampers to the Show with consecutive numbers, just haphazard as they came to hand, whatever might be the class of poultry they represented, or however numerous the pens by any one subscriber exhibited; even in this first instance the numbers for the Dog Show were intermingled. On their arrival a person was deputed to place on each label another number in pencil, of the particular pen the fowls were to be placed in for the Show. This was devised to prevent the possibility of exhibitors and judges entering into any private correspondence beforehand, or "sending their numbers to the judges"—certainly a somewhat questionable mode of evincing even a hair's-breadth confidence in the one or the other. That this new mode led to irregularities is certain, but we heartily trust that some provision for the prompt and correct return to its owner of each particular pen is made to operate, that on the face of it, at first sight, is difficult to apprehend as practicable in detail or correct in theory. Our space will not allow us to enter into details respecting the poultry exhibited, save the unqualified remark, that perhaps never, as a whole, has there been so entire an exemption manifested of the presence of indifferent pens, or so excellent a display of first-rate ones. One regulation was most satisfactory—any winner could have plate prizes if he desired it. There was a large and varied display on view, all marked in plain and legible figures on attached tickets: each party could choose for himself the most useful article for his purposes, or have the money in full—it was purely optional, and thus gained high favour.

E. Hewitt, Esq., of Sparkbrook, Birmingham; C. Ballance, Esq., of Taunton, Somerset; and — Douglas, Esq., Ranton Abbey, Stafford, were the officiating Judges of the Poultry and Pigeons.

DORKINGS (Silver Grey).—First, Lady Julia Cornwallis, Linton Park, Staplehurst. Second, J. Smith, [illegible] Hills, [illegible], Grantham. Third, T. Statter, Stand Hall, Whitefield, near Manchester. Commended, R. W. Boyle, Dublin. *Cock.*—First, T. W. Hill, Heywood, near Manchester. Second withheld.

DORKINGS (Coloured except Silver Grey).—First, Rev. J. F. Newton, Kirby-in-Cleveland, Stokesley Station. Second, T. W. Hill, Heywood, near Manchester. Third, H. W. B. Berwick, Helmsley, Yorkshire. *Cock.*—First, E. H. Garrard, [illegible] House, Mickleton, near Broadway. Second, Lady J. Cornwallis, Staplehurst. Highly Commended, J. Copple, Eccleston, Prescot.

DORKINGS (Chickens).—First, Lady Julia Cornwallis, Linton Park, Staplehurst. Second, E. H. Garrard, [illegible] House, Mickleton, near Broadway. Third, T. Bainbridge, Green Hill Cottage, Moss Side, Manchester. Highly Commended, T. Statter, Stand Hall, Whitefield, near Manchester. Commended, Rev. J. F. Newton, Kirby-in-Cleveland.

DORKING HENS (any variety).—First, R. Baker, Wynby Hill, Kirtlebridge, Dumfriesshire. Second, E. H. Garrard, [illegible] House, Mickleton, near Broadway.

SPANISH.—First, R. Teebay, Fulwood, near Preston. Second, T. Smith, Middleton. Third, C. Carrington, London. *Cock.*—First, R. Teebay. Second, J. W. Smith, Oundle, Northamptonshire. *Chickens.*—Prize, R. Teebay. *Hens.*—Prize, J. W. Smith.

GAME (Black-breasted Reds).—First, J. Sturla, Weston Hall, Stafford. Second, J. Hindson, Everton, Liverpool. Third, R. Swift, Southwell, Notts. Fourth, J. Fletcher, Stoneclough. *Chickens.*—First, J. Sturla, Weston Hall, Stafford. Second, J. Fletcher, Stoneclough. Third, W. Cox, Brailsford Hall, Derby. Fourth, S. Bird, Blackpool.

GAME (Brown-breasted Reds).—First, J. Fletcher, Stoneclough. Second, T. West, Eccleston, near St. Helens. Third, T. Burgess, jun., Burleydam, Whitchurch, Salop. *Chickens.*—First, J. Fletcher, Stoneclough. Second, J. Wood, Haigh, Wigan. Third, T. Burgess, jun., Burleydam, Whitchurch, Salop. Highly Commended, E. J. Robinson, The Nook, Ulverston.

GAME (Duckwings or other Greys or Blues).—First, J. Fletcher, Stoneclough. Second, J. Hindson, Everton, Liverpool. Third, H. Worrall, West Derby, Liverpool. Highly Commended, H. Shield, Northampton. Commended, R. Swift, Southwell, Notts. *Chickens.*—First, J. Fletcher, Stoneclough. Second, W. Stewart, Gorton, near Manchester.

GAME (any other variety).—First, T. Burgess, jun., Burleydam, Whitchurch, Salop. Second and Third, H. Worrall, West Derby, Liverpool. Fourth, J. Fletcher, Stoneclough.

GAME COCKS (Black-breasted Reds).—First, J. Hindson, Everton, Liverpool. Second, W. Cox, Brailsford Hall, Derby. Third, J. S. Butler, Poulton-le-Fylde. Fourth, J. Fletcher, Stoneclough. Highly Commended, J. Holme, Knowsley, Prescot; J. Fletcher, Stoneclough. Commended, N. Grimshaw, Pendle Forest, Burnley. *Cockerels.*—First, J. Fletcher, Stoneclough. Second, J. Sturla, Weston Hall, Stafford. Third, R. Garton, Tottington Hall, near Bury Lane.

GAME COCKS (Brown and other Reds except Black-breasted).—First, W. Gilley, Norwich. Second, J. Fletcher, Stoneclough. Third, T. Statter, Stand Hall, Whitefield. Commended, T. Burgess, jun., Burleydam, Whitchurch, Salop. *Cockerels.*—First, T. Burgess, jun., Burleydam, Whitchurch, Salop. Second, J. Fletcher, Stoneclough. Third, E. Carr, Leyland, near Preston.

GAME COCKS (White and Piles, Duckwings and other varieties except Reds).—First, J. Hindson, Everton, Liverpool. Second, J. Fletcher, Stoneclough. *Cockerels.*—First, J. Fletcher, Stoneclough. Second, W. Cox, Brailsford Hall, Derby. Third, H. Worrall, Liverpool. Fourth, L. Roberts, Preston.

GAME HENS (Black-breasted and other Reds).—First, C. Barber, Broughton, Manchester. Second, G. Clements, Birmingham.

GAME HENS (Black-breasted and other Reds).—First, H. Shield, Northampton. Second, T. W. Lockwood, [illegible]. Third, T. Dean, Poulton-le-Fylde.

GAME HENS (Black-breasted and other Reds).—Prize, J. Fletcher.

COCHIN-CHINAS (Buff and Cinnamon).—First, T. Stretch, Marsh Lane, Bootle, Liverpool. Second, W. Copple, Eccleston, Prescot. Third, J. B. Walmsley, Aughton, Ormskirk.

COCHIN-CHINA (Buff and Cinnamon).—First, W. Copple, Prescot. Second, J. J. Thomas, [illegible]. Commended, E. Smith, Middleton. *Chickens.*—First, E. Musgrave, Aughton, near Ormskirk. Second, T. Stretch, Liverpool.

COCHIN-CHINA (Cinnamon and Buff).—Prize, T. Stretch, Bootle, Liverpool.

COCHIN-CHINA (Cinnamon and Buff).—Prize, E. Musgrave, West Tower, Aughton, near Ormskirk.

COCHIN-CHINA (Brown and Partridge-feathered).—First, T. Stretch, Liverpool. First, E. Smith, Middleton, near Manchester. Second, E. Musgrave, West Tower, Aughton, near Ormskirk. Commended, E. Tudman, Whitchurch.

COCHIN-CHINA (Brown and Partridge-feathered).—First and Second, C. Tudman, Whitchurch, Salop. *Chickens.*—First, J. B. Walmsley, Aughton, Ormskirk. Second, T. Stretch, Liverpool. Highly Commended, C. Tudman, Whitchurch, Salop.

COCHIN-CHINA (Brown and Partridge-feathered).—First, T. Stretch, Liverpool. Second, E. Tudman, Whitchurch, Salop. Highly Commended, J. B. Walmsley, Aughton, near Ormskirk; J. Staley, South Collingham, near Newark.

COCHIN-CHINA (White and other varieties).—First, W. Dawson, Hopton, Mirfield. Second, E. Chase, Moseley Road, Birmingham. Third, G. C. Whitwell, Kendal.

COCHIN-CHINA (White and other varieties).—First, E. Chase, Birmingham. Second, W. Dawson, Hopton, Mirfield. *Chickens.*—First, W. Copple, Eccleston, Prescot. Second, E. Chase, Birmingham. Highly Commended, W. Dawson, Hopton, Mirfield.

HAMBURGHS (Golden-pencilled).—Third, Messrs. Carter & Tallant, Poulton-le-Fylde. Fourth, E. Carr, Leyland, near Preston. This class being decidedly bad, the First and Second prizes withheld. *Chickens.*—First, F. Hardy, Lister Dyke, Bradford. Second and Third, J. Munn, Stonehill, Stacksteads. Fourth, W. Whittam, Langley, near Macclesfield.

HAMBURGHS (Golden-pencilled).—First, Carter & Tallant, Poulton-le-Fylde. Second, E. A. Williams, Birmingham. Third, W. C. Worrall, Liverpool.

HAMBURGHS (Silver-pencilled).—First, J. Dixon, Bradford. Second, D. Harling, Middlewich. Third withheld. *Chickens.*—First, or Highly Commended, J. Fielding, Newchurch. Second, R. Hemingway, Shelf.

HAMBURGHS (Silver-pencilled).—Prize, Rev. F. L. Tatham, Broughton Rectory. *Pullets.*—Prize, N. Marlow, Denton.

HAMBURGHS (Golden-spangled).—First, W. R. Lane, Birmingham. Second, H. W. B. Berwick, Helmsley. Third, S. H. Hyde, Ashton-under-Lyne. Fourth, J. Dixon, Bradford. *Chickens.*—First, S. H. Hyde. Second, N. Marlow, Denton. Third, J. Dixon, Bradford. Highly Commended, H. W. B. Berwick; T. Burch, Sheffield. Commended, J. Newton, Leeds.

HAMBURGHS (Golden-spangled).—First, N. Marlow, Denton. Second, R. Lees, Ashton-under-Lyne. Commended, W. C. Worrall, Liverpool; J. Bamforth, Holmfirth.

Hamburghs (Silver-spangled).—First, T. Dale, Middlewich. Second, J. Dixon, Bradford. Third, Rev. T. L. Fellowes, Beighton Rectory. Highly Commended, R. Teebay, Fulwood. Commended, J. Newtown, Silsden. *Chickens.*—First, J. Dixon. Second, Lady J. Cornwallis, Linton Park. Third, T. Dale. Fourth, J. Leech, Newcastle-under-Lyne.

Hamburghs (Silver-spangled).—Prize, Lady J. Cornwallis, Linton Park.

Hamburgh (Spangled-hens) —Prize, J. Bamforth, Holmfirth. *Pullets* Prize, S. H. Hyde, Ashton-under-Lyne.

Polands.—First and Second, J. Dixon, Bradford. *Chickens.*—Prize, J. Dixon.

Game Bantams (Brown or Black-breasted Reds).—First, T. H. D. Baily, Biggleswade. Second, J. Camm, Southwell. Third, R. Swift, Southwell. Fourth, R. J. Robinson, Ulverstone. *Cock.*—First, T. H. D. Bayly. Second, J. Camm.

Game Bantams (other varieties).—First, G. C. Whitwell, Kendal. Second and Fourth, J. Camm, Southwell. Third, T. Taylor, Chesterfield. Highly Commended, L. J. Crossley, Halifax; E. Holdsworth, Leeds.

Game Bantams (Any other variety).—First, J. Camm, Southwell, Notts. Second, T. Howarth, Horwich, Lancashire. Highly Commended, L. J. Crossley, Halifax.

Bantams (Any other variety).—First, T. H. D. Bayly, near Biggleswade (Gold-laced). Second, E. Hutton, Pudsey, Leeds. Third, J. Dixon, Bradford.

Bantams (Black).—Prize, H. N. Harrop, Audenshaw, near Manchester. Highly Commended, E. Hutton, Pudsey, near Leeds.

Fowls (Any other variety).—First, R. Teebay, Fulwood, near Preston. Second, E. Hutton, Pudsey, near Leeds. Third, W. Dawson, Hopton, Mirfield. Fourth, R. Lees, Ashton-under-Lyne. Highly Commended, R Hillkirk, Altrincham; J. Dixon, Bradford.

Brahma Pootras.—First, R. Teebay, Fulwood, near Preston. Third, T. W. Hill, Heywood. *Chickens.*—First, R. Teebay, Fulwood near Preston. Second, Mrs. Seamons, Aylesbury, Bucks.

Pheasants (Any other variety).—Prize, J. J. Jones, Churton Lodge, near Chester.

PIGEONS.

Carriers.—First and Second, P. Eden, Salford.

Powters.—First and Second, P. Eden, Salford.

Fantails.—First, T. Ridpeth, Rusholme. Second, J. W. Edge, Aston New Town, Birmingham.

Almond Tumblers.—First and Second, P. Eden, Salford.

Nuns.—First and Third, J. W. Edge, Aston New Town, Birmingham. Second, E. Holdsworth, Calls, Leeds.

Balds.—First, J. W. Edge, Aston New Town, Birmingham. Second and Third, T. Ridpeth, Poplar House, Rusholme.

Owls.—First, H. Morris, Silverdale Lodge, Forest Hill, Kent. Second, G, Lee, Ardwick. Third, T. Ridpeth, Rusholme. Highly Commended, N. Roberts, Ardwick.

Jacobins.—First, C. J. Samuels, the Elms, Victoria Park.

Turbits.—First, T. Ridpeth, Rusholme. Second, W. Whiston, Langley. near Macclesfield.

Any other Distinct Variety.—First, A. White, Manchester. Second, W. Kean, Bignor Street, Cheetham Hill Road.

Trumpeters—Prize, W. H. C. Oates, Beesthorpe, Newark, Notts.

Archangels.—Prize, E. Holdsworth, 90 Calls, Leeds.

Barbs.—Prize, P. Eden, Salford. Highly Commended. P. Eden.

Dragoons.—Prize, Lady E. Talbot, Knowsley, Prescot. Highly Commended, C. J. Samuels, Victoria Park.

Foreign Pigeons.—Prize, Lady, E. Talbot, Knowsley, Prescot.

Turkeys.—First, J. Dixon, Bradford. Second, J. J. Jones, Churton Lodge, near Chester. Third, B. Barker, Wyseby Hill, Kirtlebridge, Dumfriesshire. *Poults.*—First, Rev. T. L. Fellowes, Beighton Rectory.

Geese (White).—First, Mrs. M. Seamons, Hartwell, Aylesbury, Bucks. *Goslings.*—Prize, T. W. Hill, Heywood.

Geese (Grey and Mottled).—First, J. Dixon, Bradford. Second, T. W. Hill, Heywood, near Manchester. Third, Mrs. M. Seamons, Hartwell, Aylesbury, Bucks. *Goslings.*—Prize, R. W. Boyle, Dublin.

Ducks (White Aylesbury).—First, and Second, M. Seamons, Aylesbury. Third, E. Viggor, Cheshire. Fourth, T. W. Hill, Heywood. Highly Commended, J. Hall, Macclesfield.

Ducks (Rouen).—First, J. Holme, Prescot. Second, P. Eden. Third, H. Worrall, West Derby. Fourth, Mrs. Alston, Fleetwood. Fifth, J. Dixon. Highly Commended, W. Copple, Prescot.

Ducks (Black East Indian).—Prize, F. W. Earle, Edenhurst.

Ducks (any other variety).—First, T. H. D. Bayly. Second, J. Dixon.

Ornamental Water Fowl.—First, J. Dixon, Bradford. Second, T. H. D. Bayley, Biggleswade. Third, R. W. Boyle, Dublin.

RABBIT SCHEDULE.

As the Crystal Palace Poultry Show is one of the leading exhibitions of its class in the country, the arrangements that are there adopted, no doubt, serve as an example for the provincial shows to imitate and profit by. There is one part of their programme, however, which I conceive to be a serious omission, and that is the non-encouragement that is given to the breeds of the useful Rabbits—that is, those Rabbits to which a commercial value is attached. The Rabbit-schedule of the Crystal Palace begins with "The Longest Ears," and proceeding through all varieties of colour, such as "Black and White," "Yellow and White," &c., they come to "For weight," and every other variety is included in the one remaining class of "Foreign Rabbits." The tendency of such an arrangement is to encourage the preservation of distinct colours to the disadvantage of such varieties as Silver Grey, Angora, Alpine, and Himalaya, to which there is a great commercial value attached on account of their skins. [illegible] surprising, therefore, that the exhibition in the class of foreign Rabbits should have been so meagre, and that the varieties I have mentioned were so scantily represented, as the inducement for exhibitors to send their animals and the chance of receiving a prize are so small.

I do not object to prizes being given for long ears, different colours, and for weight; but I think other varieties of greater value should not be left out. The Silver Grey or Chinchilla, the Angora, the Alpine, and the Himalaya, are all valuable—some, indeed, very much so, for their skins; and I think it a great omission in a Society professing the improvement of breeds, that these varieties are not specially and individually classified. Imagine, for instance, the Smithfield Club offering prizes for dun and white, black and white, or the longest-horned cattle, to the exclusion of what really constitutes the real value of the animal. It would not be more absurd than the plan adopted by the Crystal Palace Company in their schedule. I would, therefore, suggest, that in future all Rabbit schedules should include classes for Silver Grey or Chinchilla, Alpine, Angoras, and Himalayas. The additional expense to the Society would be a mere trifle, and the arrangement would be carrying out what is professed to be the object of all such exhibitions—the improvement of the useful breeds.—Quis.

LATE BREEDING OF BEES.

An incident of early or late breeding with a black queen came under my own observation on the 26th of November last, and agreeably to the request of "A Devonshire Bee-keeper," I forward you a description of the case as I found it.

Having sent a few of my octagon boxes to a carpenter to get covered with nine bars and Woodburyised, I had a delivery of one on the morning of the 26th of November, and determined to have it occupied to test the Woodbury-bar. I caught a sunny blink about two o'clock of the same day, and set to driving one of my Stewarton-hives into the newly-covered one. While tapping away—my assistant pointing out sealed brood and a few straggling young bees nearly emerged from their cells—I caught a glimpse of her majesty, and gently assisted her up among the driven bees, she being as fine a specimen as I ever had the pleasure of witnessing, remarking at the same time to my assistant that she surely must have some of the Woodbury strain in her veins. "Na, na," says John, "gie me a guid breeding black queen, and I'll back her against any description o' Mr. Wudbourough's Italians I hae ever seen yet." On driving the remaining portion I found the sealed brood in the inner sides of the two centre combs, and would measure about 3½ inches each diameter.

I may mention that the bees of this hive for the first six or seven days have been making comb and sealing as vigorously as in the month of May, and to all appearance at the back window are keeping true to the bars; but circumstances occurring prevented me carrying on till the beginning of January, when I may say how it has fared with my first introduction of bees to my Woodbury bar-hive.—Stewarton Apiarian.

[I have to thank the "Stewarton Apiarian" for the foregoing, which, however, appears to be an instance of late breeding, as proved by the sealed brood and young bees nearly emerged from their cells, and which I should imagine would not be unusual in a northern locality, especially if the queen were young and fecundated late in the season. Neither should I be at all surprised if egg-laying were resumed forthwith, under the influence of the liberal feeding which will be required to enable the bees to fabricate combs and provision their hive during winter. In the case related by me no such disturbing influence was at work, but breeding recommenced naturally so early as the beginning of December, after the usual autumnal cessation had taken place. We shall be glad to learn the result of the "Stewarton Apiarian's" experiment with the new comb-bar.—A Devonshire Bee-keeper.]

DRIVING BEES.

I feel constrained to speak a word in favour of this most excellent plan of expelling bees from hives, with which I have had great and continuous experience. Col. Newman certainly errs when he says "it seldom answers." I affirm, on the contrary, that it answers admirably nine cases out of ten—nay, when properly managed and followed up it cannot fail to answer in every case where a well-filled and well-peopled hive is operated on. Scarcely a summer passes that I do not drive every one of my stocks, often more than once. Fumigating I have tried again and again, but have abandoned it for ever in favour of driving. It may sometimes be used with good effect to dislodge the few bees that remain after the main population has been driven, but it is at best a filthy and troublesome mode of ejecting bees. To drive successfully, however, requires that the operator should know thoroughly what he is about, and be both patient and persevering, as well as fertile in invention, if the bees do not immediately "cut and run." Neither is it to be expected that they will surrender in every case at the first summons. Sometimes—generally I may say when the hive is full—up they rush *agmine facto*, queen and all, but there almost always remains a considerable number below; for Col. Newman is quite correct in saying that bees—those, at least, which happen to be tending the brood—are unwilling to desert them. Should this be the case, I drive them into another empty hive, compelling them to go, and go they must and do after more or less patience and perseverance. I have thus sometimes collected the driven bees into several hives, all within the space of half an hour, which afterwards were immediately re-united, by dashing them out on the ground in front of the hive into which the major part of the population was driven. Of course I make ready for all this beforehand, collecting a sufficient number of empty boxes or hives for the purpose. But this trouble is by no means necessary in every case; indeed, it is seldom necessary except when the full hive is wanted for plunder or some special manipulation. If I secure the queen at the first summons I am generally content because the bees left in the hive are only too ready to follow her, and will entirely desert the old hive (all, in fact, but the very young recently hatched bees), in the course of twenty-four hours. It is only necessary to put the hive or box containing the queen into the place of the old stock, and to remove the latter a couple of hundred yards, leaving the entrance open, and they will fly out one after another, and rejoin her.

As to bees being irascible at such times, no doubt they sometimes are so in an unaccountable manner. But in ordinary cases, if you go the right way to work, are careful not to puff and blow upon them, and handle the hives gently, avoiding all jars as much as possible, you may go to work quite at your leisure, and scarcely a bee will rise. They are more irascible in autumn than in spring and summer. Any time before August, when they are in full work, they are mostly tame and peaceable. But some persons go about among them in a fussy, clumsy manner, knocking the hive or breathing upon the bees, which always irritates them. No wonder they are irascible under such circumstances; but otherwise, when the attack is made upon them scientifically, they are at first astonished, then terrified, after which *sauve qui peut* is the order of the day, and a stampedo, like that at Bull's Run, follows. With all respect for apiarians who have written of their experiences, I have long been of opinion that Mr. Nutt was a "humbug," and his system, boxes and all, a pretty delusion. His opinion upon driving I hold to be equally valueless. Having been wonderfully taken up with him at an early period, and wonderfully disappointed, as every one is who believes in him, I speak with knowledge.—B. & W.

HOW I BECAME AN OXFORDSHIRE BEE-KEEPER.

(*Continued from page* 268.)

JUNE 26TH.—The cast, a very large one, issued from age 6, united it to cast from age 1 (crossed it in fact), for there were drones and young queens on both sides; and the farther the families are bred apart, whether in animals or plants, for these occasions the more sure is the progeny to gain vigour, or the flower beauty and substance. But they must be of the same family. A wasp species will not cross with my bees; though a variety such as the Ligurian bee would, and then they must be continually crossed, or back to their originals in a picturesque way they most inevitably would go. People might explain to me how a hare would cross with a rabbit, and that a monkey is a man after all, till they were considerably black in the face; but it would not alter my conviction to the contrary.

July 4th.—A general massacre of the innocents—viz., the drones. Found a dead queen cast out from age 6; so no more swarming this year.

I cleared off the supers from the hives on the 6th of August; and I might as well have done so a fortnight or three weeks earlier for that matter, as the bees had ceased working in them from that time: and considering the wet July, the sycamore bloom minus, and the lime flowers sparse, with the further impress that each hive gave me two swarms, the following specified deprivations incline me to feel satisfied that my bees have done their duty. Age 3 filled two fig-drums; weight of honeycomb 11 lbs. nett, and a Payne's straw super partly full 6 lbs. Age 2 filled one of Neighbour's flat-topped glasses 9 lbs., a small fig-drum 2 lbs., and partly another 3¼ lbs. Age 1 began working in a breakfast-glass, and that was all. And I find my old original age 6's super-working powers are exhausted. So let it go, poor old hive! and I have won thus much satisfaction in giving it so long a trial that, beyond four years for the stocks to remain profitable, it is unadvisable to retain them. The two united swarms of the 5th of June filled two of my breakfast-glasses, and partly another 5¼ nett, and the united swarms and casts of the 13th and 14th of June worked me a Payne's super 11¼ lbs.—in all 47¾ of beautiful honeycomb fit to set before the Queen, and just possibly a portion of it will be set before Her Majesty.

On the first of the morning I visit my apiary. Whoever has the troubles of the world weighing upon him (I have had my share—more than my share I sometimes think), I advise him to keep bees, and to do the same thing, and not only in the morning early but at every opportunity; and I will answer for it, it will prove one of the best antidotes known against troubles. No persons can view their industrious and spirited movements without sympathetically becoming decoyed out of themselves as it were. But that is not altogether what I was driving at. Cobwebs are apt to become woven around the hives and pedestals during the night; and a few long tail-feathers from a pheasant tied to the end of a stick, for the purpose of whisking away the webs on the first thing of a morning, will prevent many bees from being caught in them to arrive at an untimely end. My bees are very courageous, and do not care a jot about the plague of wasps we have been infested with this season since I placed on their winter entrances without the slides. I was induced to do so on the day that I took off the supers, as it was desperate work for the guards without them; and from the manner they immediately began fanning themselves and adjusting their antennæ, they instinctively proclaimed to the wasps, "Who cares for you, now?" I had only four zinc winter entrances: therefore to the other hives I placed some small mahogany wedges, redan fashion, to contract the summer entrances, and woe be to any intruder who attempts to force his way there.

Next in order I will describe the way in which I "take" a hive, and the subject for illustration shall be my original age 6. I choose the middle of a fine day, and am careful to have all my materials, specified already, at hand; and when depriving these large hives of their combs, it will be necessary to have two large dishes, and two small tablecloths, to cover them with, into the bargain. I never use chloroform, puff-ball, or tobacco-smoke, and I am not ashamed to say that I detest the latter as much as ever the bees can do, and poor little animals, that is saying a great deal, seeing the effect it has upon them. No, I like to see my bees active and well in all my operations, when I go about them. Neither do I resort to driving them from one hive to another, as that operation once took me three hours to perform. "Clumsy fellow!" many will ejaculate, still it is a species of tomtomming I cannot spare time for. So on the 6th instant, at noon, I relieved the pan, &c., from the hive, and turned it over bodily, as I said anent cleaning the boards in the spring; but now I set the reversed hive upon *terra firma*, and with the honey-knife relieve the edges of the nearest comb from the side of the hive, cautiously propelling it, in order to allow the bees to get out of the way of the spud, which as they are vigorous and active they will presently do. Then work the comb backwards and forwards, meantime maintaining a gentle lifting-force, which will probably relieve it completely from the bottom. In extracting the first, sometimes the second comb, the horizontal phleme cannot be used; afterwards it is easily inserted. Exert the same caution with it regarding the bees, and giving them time to avoid it as much as possible. Brush off what bees remain about the comb with the wing *into* the hive, for the queen may possibly number one among them, and should she become whisked away out of the hive, a difficulty would be created antagonistic to the proper re-assembling of the colony together, which in my prac-

Hamburghs (Silver-spangled).—First, T. Dale, Middlewich. Second, J. Dixon, Bradford. Third, Rev. T. L. Fellowes, Beighton Rectory. Highly Commended, R. Teebay, Fulwood. Commended, J. Newtown, Silsden. *Chickens.*—First, J. Dixon. Second, Lady J. Cornwallis, Linton Park. Third, T. Dale. Fourth, J. Leech, Newcastle-under-Lyne.

Hamburghs (Silver-spangled).—Prize, Lady J. Cornwallis, Linton Park.

Hamburgh (Spangled-hens) —Prize, J. Bamforth, Holmfirth. *Pullets* Prize, S. H. Hyde, Ashton-under-Lyne.

Polands.—First and Second, J. Dixon, Bradford. *Chickens.*—Prize, J. Dixon.

Game Bantams (Brown or Black-breasted Reds).- First, T. H. D. Baily, Biggleswade. Second, J. Camm, Southwell. Third, R. Swift, Southwell. Fourth, R. J. Robinson, Ulverstone. *Cock.*—First, T. H. D. Bayly. Second, J. Camm.

Game Bantams (other varieties).—First, G. C. Whitwell, Kendal. Second and Fourth, J. Camm, Southwell. Third, T. Taylor, Chesterfield. Highly Commended, L. J. Crossley, Halifax ; E. Holdsworth, Leeds.

Game Bantams (Any other variety).—First, J. Camm, Southwell, Notts, Second, T. Howarth, Horwich, Lancashire. Highly Commended, L. J. Crossley, Halifax.

Bantams (Any other variety).—First, T. H. D. Bayly, near Biggleswade (Gold-laced). Second, E. Hutton, Pudsey, Leeds. Third, J. Dixon, Bradford.

Bantams (Black).—Prize, H. N. Harrop, Audenshaw, near Manchester. Highly Commended, E. Hutton, Pudsey, near Leeds.

Fowls (Any other variety).—First, R. Teebay, Fulwood, near Preston. Second, E. Hutton, Pudsey, near Leeds. Third, W. Dawson, Hopton, Mirfield. Fourth, R. Lees, Ashton-under-Lyne. Highly Commended, R Hillkirk, Altrincham; J. Dixon, Bradford.

Brahma Pootras.—First, R. Teebay, Fulwood, near Preston. Third, T. W. Hill, Heywood. *Chickens.*—First, R. Teebay, Fulwood near Preston. Second, Mrs. Seamons, Aylesbury, Bucks.

Pheasants (Any other variety).—Prize, J. J. Jones, Churton Lodge, near Chester.

PIGEONS.

Carriers.—First and Second, P. Eden, Salford.

Powters.—First and Second, P. Eden, Salford.

Fantails.—First, T. Ridpeth, Rusholme. Second, J. W. Edge, Aston New Town, Birmingham.

Almond Tumblers —First and Second, P. Eden, Salford.

Nuns.—First and Third, J. W. Edge, Aston New Town, Birmingham. Second, E. Holdsworth, Calls, Leeds.

Balds.—First, J. W. Edge, Aston New Town, Birmingham. Second and Third, T. Ridpeth, Poplar House, Rusholme.

Owls.—First, H. Morris, Silverdale Lodge, Forest Hill, Kent. Second, G, Lee, Ardwick. Third, T. Ridpeth, Rusholme. Highly Commended, N. Roberts, Ardwick.

Jacobins.—First, C. J. Samuels, the Elms, Victoria Park.

Turbits.—First, T. Ridpeth, Rusholme. Second, W. Whiston, Langley. near Macclesfield.

Any other Distinct Variety.—First, A. White, Manchester. Second, W. Kean, Bignor Street, Cheetham Hill Road.

Trumpeters —Prize, W. H. C. Oates, Beesthorpe, Newark, Notts.

Archangels.—Prize, E. Holdsworth, 90 Calls, Leeds.

Barbs.—Prize, P. Eden, Salford. Highly Commended, P. Eden.

Dragoons.—Prize, Lady E. Talbot, Knowsley, Prescot. Highly Commended, C. J. Samuels, Victoria Park.

Foreign Pigeons.—Prize, Lady, E. Talbot, Knowsley, Prescot.

Turkeys.—First, J. Dixon, Bradford. Second, J. J. Jones, Churton Lodge, near Chester. Third, B. Barker, Wyseby Hill, Kirtlebridge, Dumfriesshire. *Poults.*—First, Rev. T. L. Fellowes, Beighton Rectory.

Geese (White).—First, Mrs. M. Seamons, Hartwell, Aylesbury, Bucks. *Goslings.*—Prize, T. W. Hill, Heywood.

Geese (Grey and Mottled).—First, J. Dixon, Bradford. Second, T. W. Hill, Heywood, near Manchester. Third, Mrs. M. Seamons, Hartwell, Aylesbury, Bucks. *Goslings.*—Prize, R. W. Boyle, Dublin.

Ducks (White Aylesbury).—First, and Second, M. Seamons, Aylesbury. Third, E. Viggor, Cheshire. Fourth, T. W. Hill, Heywood. Highly Commended, J. Hall, Macclesfield.

Ducks (Rouen).—First, J. Holme, Prescot. Second, P. Eden. Third, H. Worrall, West Derby. Fourth, Mrs. Alston, Fleetwood. Fifth, J. Dixon. Highly Commended, W. Copple, Prescot.

Ducks (Black East Indian).—Prize, F. W. Earle, Edenhurst.

Ducks (any other variety).—First, T. H. D. Bayly. Second, J. Dixon.

Ornamental Water Fowl.—First, J. Dixon, Bradford. Second, T. H. D. Bayley, Biggleswade. Third, R. W. Boyle, Dublin.

RABBIT SCHEDULE.

As the Crystal Palace Poultry Show is one of the leading exhibitions of its class in the country, the arrangements that are there adopted, no doubt, serve as an example for the provincial shows to imitate and profit by. There is one part of their programme, however, which I conceive to be a serious omission, and that is the non-encouragement that is given to the breeds of the useful Rabbits—that is, those Rabbits to which a commercial value is attached. The Rabbit-schedule of the Crystal Palace begins with "The Longest Ears," and proceeding through all varieties of colour, such as "Black and White," "Yellow and White," &c., they come to "For weight," and every other variety is included in the one remaining class of "Foreign Rabbits." The tendency of such an arrangement is to encourage the preservation of distinct colours to the disadvantage of such varieties as Silver Grey, Angora, Alpine, and Himalaya, to which there is a great commercial value attached on account o [illegible] in the class of foreign Rabbits should have been so meagre, and that the varieties I have mentioned were so scantily represented, as the inducement for exhibitors to send their animals and the chance of receiving a prize are so small.

I do not object to prizes being given for long ears, different colours, and for weight; but I think other varieties of greater value should not be left out. The Silver Grey or Chinchilla, the Angora, the Alpine, and the Himalaya, are all valuable—some, indeed, very much so, for their skins; and I think it a great omission in a Society professing the improvement of breeds, that these varieties are not specially and individually classified. Imagine, for instance, the Smithfield Club offering prizes for dun and white, black and white, or the longest-horned cattle, to the exclusion of what really constitutes the real value of the animal. It would not be more absurd than the plan adopted by the Crystal Palace Company in their schedule. I would, therefore, suggest, that in future all Rabbit schedules should include classes for Silver Grey or Chinchilla, Alpine, Angoras, and Himalayas. The additional expense to the Society would be a mere trifle, and the arrangement would be carrying out what is professed to be the object of all such exhibitions—the improvement of the useful breeds.—Quis.

LATE BREEDING OF BEES.

An incident of early or late breeding with a black queen came under my own observation on the 26th of November last, and agreeably to the request of "A Devonshire Bee-keeper," I forward you a description of the case as I found it.

Having sent a few of my octagon boxes to a carpenter to get covered with nine bars and Woodburyised, I had a delivery of one on the morning of the 26th of November, and determined to have it occupied to test the Woodbury-bar. I caught a sunny blink about two o'clock of the same day, and set to driving one of my Stewarton-hives into the newly-covered one. While tapping away—my assistant pointing out sealed brood and a few straggling young bees nearly emerged from their cells—I caught a glimpse of her majesty, and gently assisted her up among the driven bees, she being as fine a specimen as I ever had the pleasure of witnessing, remarking at the same time to my assistant that she surely must have some of the Woodbury strain in her veins. "Na, na," says John, "gie me a guid breeding black queen, and I'll back her against any description o' Mr. Wudbourough's Italians I hae ever seen yet." On driving the remaining portion I found the sealed brood in the inner sides of the two centre combs, and would measure about 3½ inches each diameter.

I may mention that the bees of this hive for the first six or seven days have been making comb and sealing as vigorously as in the month of May, and to all appearance at the back window are keeping true to the bars; but circumstances occurring prevented me carrying on till the beginning of January, when I may say how it has fared with my first introduction of bees to my Woodbury bar-hive.—Stewarton Apiarian.

[I have to thank the "Stewarton Apiarian" for the foregoing, which, however, appears to be an instance of late breeding, as proved by the sealed brood and young bees nearly emerged from their cells, and which I should imagine would not be unusual in a northern locality, especially if the queen were young and fecundated late in the season. Neither should I be at all surprised if egg-laying were resumed forthwith, under the influence of the liberal feeding which will be required to enable the bees to fabricate combs and provision their hive during winter. In the case related by me no such disturbing influence was at work, but breeding recommenced naturally so early as the beginning of December, after the usual autumnal cessation had taken place. We shall be glad to learn the result of the "Stewarton Apiarian's" experiment with the new comb-bar.—A Devonshire Bee-keeper.]

DRIVING BEES.

I feel constrained to speak a word in favour of this most excellent plan of expelling bees from hives, with which I have had great and continuous experience. Col. Newman certainly errs when he says "it seldom answers." I affirm, on the contrary, that it answers admirably nine cases out of ten—nay, when properly managed and followed up it cannot fail to answer [illegible] where [illegible] well-filled and well-peopled hive is

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	JANUARY 7—13, 1862.	Weather near London in 1861.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
7	Tu	Correa speciosa.	30.146 – 30.031	32 – 10	N.W.	—	7 af 8	6 af 4	morn.	☽	6 35	7
8	W	Correa pulchella.	30.263 – 30.221	37 – 6	N.W.	—	7 8	7 4	50 0	8	7 1	8
9	Th	Cuphea platycentra.	30.297—30.217	38 – 8	S.W.	—	6 8	9 4	58 1	9	7 26	9
10	F	Cinerarias.	30.380 – 30.270	23 – 9	N.E.	—	6 8	10 4	6 3	10	7 51	10
11	S	Cytisuses.	30.317—30.184	35 – 19	S.	—	5 8	12 4	11 4	11	8 14	11
12	Sun	1 Sunday after Epiphany.	30.140—29.922	40 – 31	S.	—	4 8	13 4	10 5	12	8 38	12
13	M	Cyclamens.	29.758 – 29.683	34—32	S.E.	.10	4 8	15 4	4 6	13	9 0	13

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 41.5° and 30.9° respectively. The greatest heat, 53°, occurred on the 12th in 1852; and the lowest cold, 6°, on the 9th in 1841. During the period 135 days were fine, and on 103 rain fell.

THE BEST ASPECT FOR WINTERING FLORISTS' FLOWERS.

BY almost every calendar, book, or treatise that has to do with florists' flowers, such as the Auricula, Carnation, and Pansy, the direction given is—Place the frames which contain the plants in winter facing the south. Now, of the wisdom of this procedure I have had for some time very considerable doubt; and having now tried an opposite system for two seasons, hesitate not to say that my experience entirely confirms my impressions. It may seem very early to speak of seasons when we are only now at the end of December, but I conceive that the two last months of the year are the most injurious to these flowers; for, let it be well settled, that their great enemy is not frost but damp. Frost we may guard against—frigi domo, mats, &c., enable us pretty well to do this; but the insidious approaches of mild, muggy, damp weather, are matters of far greater danger; you may open your frames, but it is only to let the damp air in, and black spot appears on your Carnation leaves, and the rot attacks your Auriculas before you knew that it even meant to come.

I do not attempt to enter into any physiological reasons as to why this is so, for I have ever found that (while unquestionably there is a physiology, true both as to animal and vegetable life), those who wish to adopt a certain line of conduct make their physiology so very plastic as to meet all their requirements: thus we have been generally told by doctors, that suppers are very hateful and destructive things; but I saw not long ago, that a very eminent physician had proved on the clearest principles of physiology, that they were the very reverse. (I wonder whether he is fond of that social meal himself.) But these following reasons induced me to try whether a northern aspect would not do as well, or better. 1. In the case of the Auricula, I knew that in its natural state it never gets a drop of water, or sees a gleam of sun, during the winter months; and though I could not go the lengths of some grower, who heaped snow on his collection until he lost it altogether, I yet felt they could not possibly get any harm from not having sun then. 2. In a southern aspect they are brought into alternate hot and cold fits. The bright sun thaws the frost, and then the cold nights, or days, as the case may be, again congeal the soil, and thus the roots of the plant are continually exposed to great changes of temperature, which are alike injurious to man, beast, or plant. Whereas, in a northern aspect, although your plants are, it is true, longer under the influence of frost (which when severe will pierce through all the covering you may put over your frame), yet that they do not suffer much from this is testified by last winter; for in the case of Auriculas, at least, there never was a finer bloom than this season all over the kingdom, as they are not exposed to those changes of temperature which, as I have said, are injurious to their well-being. 3. An immense amount of trouble is saved in watering. In a south aspect you are constantly obliged to do this, and oftentimes with the fear, perhaps, of a frost succeeding it, for, of course, the warm sun soon dries the soil. Whereas in a north aspect I have left my frames for nearly three weeks without a drop, my plan being always to give them a good quantity, and not dribble it out. 4. In the case of Auriculas, at least, there is no shifting of frames. My present stage stands as it has done for nearly two years. A north aspect is the only one suitable for spring and summer, and by adopting it in winter, it is evident no change need be made. These reasons weighed much with me in adopting the plan, and I am happy to testify to its success. Of course there are other points to be considered before pursuing this plan. Mine is a very open and airy position: were it confined, probably it would not answer so well. Such points are often overlooked. I once remember a first-rate grower of Auriculas telling me he bloomed his in a southern aspect. On seeing his place my wonder ceased; for just in front of his stage was a magnificent Yew-hedge about 15 feet in length, which effectually shielded the rays of the sun from the plants, while they enjoyed the warmth of the aspect: and as he was desirous of having his plants in early for exhibition it succeeded well. These little matters, being often overlooked, cause great perplexity to persons who follow out the instructions of those who do not look at all points of the question. I have simply told the result of my experience, hoping it may be useful to some who, like myself, have not over-much time to give to gardening.

D., *Deal.*

FACTS AND OPINIONS, PAST AND PRESENT, RELATIVE TO CROSS-BREEDING PLANTS.

Is this, then, to be really the busiest season for crossing flowers on record? I merely inferred it should be so from the writings of the cross-breeders themselves during the last twelve months, and from the seeming purport of the cross-examination to which they were exposed. One thing is certain: the last year was fruitful in the rooting-up of old prejudices which have been inseparable from the doings of cross-breeders, and the working of their immediate predecessors the hybridisers—I mean the mystery in which both indulged for so many years with respect to their rules of crossing, if I may so express myself.

It is now a plain, positive, well-known fact that the hybridisers of the last generation carried their rules of secresy beyond the bounds of strict honesty. They originated seedlings by their mystic art which they sent into cultivation under the sanction of the highest botanical authority of their day as genuine wild species which had been introduced from foreign parts in the usual way. That was before people discovered the value of cross-breeding, or the way to improve new races of plants. All that has been said of cross-breeders—and all true florists are nothing else in that line—is that they kept their art a secret from the rest of the world; while the hybridisers took the advantage which their branch of the subject gave them to hoodwink their customers, and at the same throw to put the cultivators of botany off their guard so far as led them to publish several hybrid plants as genuine species.

That was another great step backwards; the first being the one which prompted the belief in the possibility of making mule plants—a power which has not yet, at all events, been revealed to man. The responsibility of the doctrine of mulification, to make a new word, rests, assuredly, on the same shoulders which carried the mystery of hybridisation to the point of dishonesty. But then there is this to advance in their favour for deceiving the botanists on the subject of muling—they, the hybridisers, were deceived themselves. In their branch of the business nothing is more common than the production of barren seedlings in some of the families then under crossing, and their operation extended at that time no farther than the crossing of species, and, therefore, they could not know that barren seedlings could be effected, save between two of their species, and they must have been in earnest in their belief on that score.

Here, then, are a moral and a practical illustration of the necessity for keeping the relative labours of the cross-breeders and the hybridisers apart, and not mixing them up loosely in writing or in conversation. One whole generation has been deceived into the belief of the doctrine that mules can be obtained among plants by manipulation, through the baseless inference from the working or the hybridising of a few species taken from a very small number of genera, of which the Heath, the Geranium, and the Lobelia are the three principal defaulters. You might almost put the names of all the old Heaths, Geraniums, and scarlet Lobelias on slips of paper into a hat, shake it, tumble them out on the table, and take any two of each of them to obtain a mule seedling, or a plant which is altogether barren. But now-a-days the very same result is produced without the union of kinds at all; yet the hybridisers of the last generation must not, therefore, be stigmatised, seeing they had no knowledge of the facts which cultivation and crossing for the improvement of races have brought to light since their day. Nor must we yet look for the universal disbelief in the doctrine of muling amongst our seedlings.

It is strange but yet true, that it is less easy to give up a wrong idea than to adopt a new one, whether it be right or wrong. But those who will run the race for first-class seedlings during this next season, should well understand the conditions of the subjects for their experiments, and the results which practice has proved to be best, and avoid the errors which the same practice has shown to be untenable. Cross-breeders should also know the biography, as it were, of all the families which have hitherto been crossed successfully. The next step would be tô get a clear insight of so many of the families, or parts of families, which are reputed to be fit subjects for the hybridiser. For when you come to new subjects for crossing, the hybridiser must first have his turn at them ere they are the proper, or rather the property of the cross-breeder.

Who is able, however, to give us the biography of all the families which have been successfully crossed? The first thing a biographer in this line would meet with is very perplexing indeed. There are so many apocryphal genealogies given by continental writers, that a conscientious man can hardly bring his mind to believe them when they state the truth, and in the home process we are almost all of us bound down to the merits of a few popular plants. There are not over ten or a dozen families to which a British crosser would think it worth his time and trouble to experiment upon; and I have so few materials to enable me to give an outline of such biography, that I can merely break the ice to day and trust to the good offices of the gentlemen who have taken part and interest in our discussions on this subject, to fill up the schedule from time to time as the spirit of the times moves them.

t is not much over eighty years since the first experiments in crossing plants began in Germany, by Kölreuter, who made known his success and failures in the "Acts of the Petersburgh Academy." He is, therefore, considered as the father of hybridisers, for cross-breeding is of more recent date. The plants with which Kölreuter was successful were principally of the genera of Lycium, Digitalis, Nicotiana, Datura, and Lobelia. Mr. Knight was the first cross-breeder in England, and he also made some experiments on hybridising. All his experiments on fruit trees, with a few exceptions, were on the cross-breeding model. His [illegible] some Apples were hybrids or half hybrids. The rest of his seedling Apples and Pears, as far as I can recollect, were merely cross-bred, and he is certainly the father of cross-breeding, as Kölreuter was the father of hybridising. Dr. Herbert was in the field as both a hybridiser and cross-breeder nearly as soon as Mr. Knight, and the reports of their experiments were first given to the world through the "Transactions of the Horticultural Society of London."

Dr. Herbert was the first person who discovered the fact that mules or barren seedlings were more numerous from the hybridising process than from cross-breeding, and it is over a quarter of a century since he refuted the doctrine of mule plants altogether, and showed that mules first tumbled in from the union of two of the species nearest in affinity, and, secondly, from flowers which were not crossed at all; so that the refutation of that doctrine does not rest with me—I only confirmed it by my own practice.

Mr. Knight was the first person who advanced the doctrine or dogma, that a fertile cross was proof direct that the two parents were of the same species; and he assumed as a consequence that a sterile offspring was nearly conclusive evidence that they are of different species. Both these opinions have since been conclusively proved to have no foundation whatever.

Dr. Herbert was the first person who held the opinion that the production of any intermixture amongst vegetables, whether fertile or not, was presumptive evidence that the parents were descended from one common stock, and showed that they were referable to one genus. This opinion has not yet been practically refuted in one single instance, and as a sequence, we cannot have a real mule plant yet in cultivation. Show me a barren plant, the offspring of any two members, or species of two distinct genera, and then I shall have seen a real mule plant for the first time. The botanical world was, at that time, much divided on these intricate questions, which are simple enough in these days through a wide extension of the more popular branch of crossing flowers—that of cross-breeding; but in order to clear the ground for the investigations of the biographer of cross flowers, it is necessary these diverse opinions should be traced to their origin, to their effects on the minds of men, and to their having been proved to be right or wrong by subsequent experiments.

But I have another object in view in thus putting them—to see if they or any such opinions are yet held, or are thought to be fit subjects for discussing now; and every one is invited to add his or her views on every one of these subjects, if they are backed by trustworthy experiments which go to prove the part or side taken by the writer. Mere opinions are of little use in such questions.

One more vexed question, and I am through with this part of the subject. What is the analogy between plants and animals in their capacity to breed crosswise within certain limits? That was a bone of contention in science between forty and fifty years back. All the ologies on living things, and more particularly ornithology and zoology, would need to be recast and remodelled before the question could be satisfactorily answered, was about the sum total of that controversy. Some said that certain birds and animals belonging to two different genera had crossed, and why not plants so far apart? No, said they on the other side; you must begin first and revise your lists of genera, and then if ever this subject is fathomed, we shall see if a perfect analogy between plants and animals is apparent, not otherwise. The meaning of all that was, that the classification of the various families was not quite according to Nature, that Nature had no mules, and if you spoke of the Spanish mule you were told the parents came of one stock.

The possibility of acclimatising plants was then all but the universal belief. Now, we acknowledge and have confirmed that the only mode of acclimatising a plant is to change its whole constitution through the process of crossing in-and-in with a hardy kind, which, by judicious selections from numbers of seedlings may be done, and still retain the looks of the original kind.

The Crinum, the Amaryllis, the Gladiolus, and the Camellia, were the first four families of plants which were crossed successfully in England. The two former were crossed as far back as the first years of this century, the Gladiolus as early as the battle of Waterloo, and the Camellia much about the same time. As late as 1820, the Crinum and Hippeaster were set down in botanical books as species of Amaryllis; but the experiments of Dr. Herbert proved them, about the same time, to have been widely different both from each other as well as from Amaryllis, as that was [illegible] founded by Linnæus on the foundation of the

Belladonna Lily, and on these three races of the Amaryllid order the first clash of arms took place between botany and hybridisation. The Camellia was bred in-and-in from the first by Mr. Chandler, of Vauxhall Nursery, not hybridised, and to the present day I am not aware of any hybrid plants among them. For a long time after the introduction of Camellias there was only one source whence hybrid Camellias could be had. There was but one distinct species, then called Sasanqua rosea, and afterwards named Maliflora, and the varieties of Camellia japonica—the japonica itself being the single kind since then used as stocks to work the double varieties on. I am not quite certain, as I am only writing from memory, if Mr. Chandler did not raise some hybrid seedlings by the pollen of Sasanqua rosea; but there are plenty of witnesses to put me right there. Reticulata was the next and third species of Camellia in cultivation, and I am not sure if there is one hybrid seedling from it, or by it anywhere. D. Beaton.

THE IN-DOOR PLANT-CASE.—No. 6.

(*Continued from page* 252.)

I will now give a few hints on raising seedlings in these tiny stoves. Mine was last year devoted for some weeks to the little seedlings, and I have found Ipomæas, Passion-Flowers, Maurandyas, Mignonette, Canariensis, Cobœa scandens, Sweet Peas, Balsams, Petunias, Mimulus, Fuchsias, Geraniums, Begonias, Capsicums, and Tomatoes, to grow in it beautifully. I had others also, but I forget their names. Cucumbers and Melons I had not; but this year I hope to prove the success of the case with them, since the Capsicums, and Tomatoes, and Balsams I fancy must require quite as much heat as these —at least the hardier kinds for greenhouse or out-door management.

The heat requires to be rather high. My case was filled twice in the twenty-four hours during the seed time, and the degree of heat is easily varied for different pots and pans, by placing them deeper in the sand or higher, or by disposing empty flower-pots underneath the seed-pots conveying the hot air.

I am, on the whole, inclined to steep the larger seeds for a short time in warm water, to make them sprout more readily. The Ipomæas, and others as large, should be laid on lightly-shaken soil well drained with charcoal. The seeds never being sown within an inch of each other, and then being covered with a quarter of an inch of soil pressed lightly down about them, they may be kept as warm as 75° to 80° until they come up.

I find, however, that when once up the sooner these seeds begin to have less heat given to their roots the better they will thrive. I pot mine into four-inch pots, well drained, as soon as they are large enough to move easily, and then they are kept in the same warm case for a few days to settle. In potting any of these seedlings a little hole should be made in the soil, and holding the seedling, with a little earth attached, in this little hole, soil should be lightly, and very gently, shaken in, till full.

Balsams, again. They take a vast deal of water, and yet require, while young, very first-rate drainage. A pan well drained with charcoal does best for them, and I have tried a heap of charcoal in the middle, through which one could pour in water to the roots, without touching the stems. Most seedlings, however, do very well as long as the sand in which they stand is moist.

I have generally left on air all day, but closed the case up at night; the sunshine by day raising the temperature till it is higher than at night, in spite of the night-closing. Great care must be taken to observe the first sign of mildew, to remove the affected seedlings, and to give less water or more air. For all seedlings, perhaps the easiest way to water without touching the tender leaves and stems, and the best way, therefore, of avoiding damp, is just to sow round the edge, and leave a little pit in the centre of each pot.

Geraniums grow most charmingly from seed, and are pretty even as very little plants. They should be sown carefully, as the little spiral stalk twists and untwists with wet and drags up the seed. I have generally cut off this stalk, and my seeds have come up well. Geraniums, too, are pleasant things in coming up very quickly, and their pretty foliage makes fair amends for their not blossoming the first year at all. They should be put into very little pots, and changed as the roots get matted, or rather begin to mat. The seedlings are very brittle and need most gentle handling.

Balsams should be potted on from one pot to another as fast as possible, just as the roots begin to fill the soil; but if there is only room for a very few special flowers, they may stay on, in a three or four-inch pot, till one precocious flower appears to show if it is double, and, therefore, worth preserving.

Mimulus is also a most pleasant thing to raise, for there we have greenhouse flowers out within three months. It does well even in a scorching London window, if in a double pot, standing in a saucer, kept full of water. Three or four plants together, look very pretty for their variety in a four-inch flower-pot. The smaller the pot in all cases, I think the sooner flowers appear; but it does not answer to make the plants look too stunted.

I think that a case quite devoted to seeds is best, for the short time they take to come off and settle in after the first transplantation. Achimenes, &c., might at the same time be started, and a four-foot case filled with seeds and tubers would give with common success an immense stock of flowers. Primulas may also thus be raised, as well as Carnations and innumerable other things; in fact, all tender seeds that can be grown in stoves.

Hardier things like Canariensis and Sweet Peas cannot be removed too quickly to a cooler place. Ipomæas, too, are better away very soon. I place mine in a cold frame, merely filled with shelves close to the glass, which move up and down to suit the size of the plants placed on them. If I had, however, all seeds of one class in a case together, I should regulate air and heat, by variations as to the water, and by taking out glasses. In fact, one end of the case naturally giving so much root heat, and the other end none, we have a fair chance of making our cases keep pretty fairly one thing with another—hardy things, and those far advanced at the cooler, the tenderest and least forward at the warmer end.

A little spoke of ivory like a flattish crochet-needle is the best thing to use for "pricking-out." The crochet-hook is also often, in many ways, most useful in disentangling plants.

Light for the forwarder seedlings is a most essential thing; and it should always be remembered that the quantity of water depends on quantity of leaves and roots rather than on much soil, which it simply soaks and spoils—that the absence of light should invariably be accompanied by a reduction of heat—and that thus, at night, the temperature should be always decidedly lowered for some four or five hours, to give the plants a rest—an absence of excitement, which is to them a sleep. —E. A. M.

REPOTTING ROSES—PRUNING DATURA CLORANTHA.

I shall be much obliged if you will inform me what is the best time of year to fresh pot Roses. I have not touched mine since they bloomed last summer. They are in a cold-pit and I intend taking them out, prune, and repot them, and place them in the greenhouse at the end of January. Is that right, and ought I to shake off much of the old earth?

I raised some Datura clorantha and Wrightii from seed last spring. None of the plants bloomed. Should I cut them down and repot them in the spring to make them bloom next summer? —"An Amateur" (M.).

[It is bad policy to prune and repot at the same time. The

Roses needing it should have been repotted in the beginning or middle of September, removing a little of top and bottom soil, and picking out some from the sides of the ball, and using rich loamy soil and not too large pots. The plants might then have been pruned, any time after the fall of the leaf on to the time when it was resolved to start them into growth. Now, these Roses had better be pruned, drainage examined, surface soil removed, and rich top-dressings given instead of repotting. We should do this at any rate with all intended to bloom early. You may nip off the points of the Daturas, and when they began to grow, repot them. Ours flowered last season, but not strongly. We expect they will do so next year. They are now merely kept from frost.]

STOVE PLANTS

THAT WILL BEAR CONSERVATORY TEMPERATURE—FORCING LABURNUM.

HAVING, for the size of my stove and the requirements for it, more plants than I could conveniently accommodate, still unwilling to relinquish any of my old acquaintances, I could but resort, since space must be had, to the expedient of removing some to the conservatory or cold-houses. But here arose a question, Which must they be? Looking around in one of those abstracted moods all whose minds are fully exercised at times feel, my hand came into close proximity with the sharp-pointed leaves of the Bonapartea juncea; and, as Nature prompts us to guard against the second attack of a foe, judging from his robust appearance his constitution was sound, I decided (although "Hortus Britanicus" assigns it the stove and my worthy predecessors had allowed it these cozy quarters), on committing him to the companionship of my Azaleas, Camellias, &c. Icosandria pendula, Ficus elasticus, and Dracæna terminalis were alike turned out. In doing so I have not only in some measure given myself elbow-room, but done them an infinite kindness, which their growth of the past season fully testifies, and their present appearance bespeaks them far more at home than in the close atmosphere of a stove. I am not yet satisfied with this small relief, but shall, on the return of spring, select others and leave them during next winter in the conservatory for trial. Not having heard of the first-named plant as greenhouse, I thought this might be of service to some of your readers who may possess it, and, like myself, have but one stove in which he is required to grow during the dull months of winter Cucumbers, Beans, Vines in pots, collection of stove plants, Roses, Lilacs, Rhododendrons, Laburnums, and a host of other things for conservatory decoration, besides a regular supply of that generally-esteemed (and all this season doubly so) vegetable, Asparagus. This house may truly, as "N. H. P." says, be considered an *omnium gatherum.*

I will but add one remark. I am greatly surprised so seldom to meet with the Laburnum as a forced plant, than which nothing under ordinary treatment does better; and what, may I ask, can exceed the beauty of a Laburnum, with its mass of golden blooms towering above the crimson Camellia and the delicate Azalea? Truly do I prize them, and grievously disappointed am I should anything cause a lack of my favourites during February and the following two months, to add its charms to my conservatory.—O. B.

THE FARMER AND GARDENER COMBINED.

THE few remarks that I have made in THE JOURNAL OF HORTICULTURE were intended as leading-strings to the would-be "generally useful," and to open a market for a number of very useful young men, that otherwise would spend in a nursery at the pay of a labourer the very prime of their days.

Now, whether it be milking a cow or feeding a pig, it can be done profitably and unprofitably; and, before a man is competent either to superintend the one or the other, he should himself learn how to-do it profitably.

The market I allude to will be in the majority of instances single-handed, with, perhaps, the assistance of a boy to mow the lawn, weed, &c.; still, if William Robinson, or any one else, should find that they had outgrown their limited sphere, they will find plenty of room to expand, as larger situations will grow out of the smaller ones in proportion to their profitable management. [illegible] a matter [illegible] gentleman [illegible] he understands both departments practically, in preference to the man that is acquainted with the one department practically and the other theoretically.—THE DOCTOR'S BOY.

TREATMENT OF GERANIUMS WINTERING IN A CELLAR.

I HAVE put away in a cellar a number of Geraniums; some planted in boxes according to the directions in this Journal, and others hung up by the heels. Many of the points are decaying. Should these be cut back as they decay? Should the leaves of Geraniums hung up be cut off like those that are planted? or is it sufficient to pull them off when quite dead?—B.

[The proper treatment of Geraniums which are hung up in a cellar, or planted in boxes or in a bed of mould in a cellar, is to look over them occasionally, and to cut off every morsel which decays or damps; then to dust over the fresh cuts some very dry powder. Lime in powder is the best; but we use the finest ashes fresh from under the grate, which are nearly as good. If the leaves of hung-up Geraniums wither dry, we leave them till spring? if they damp, we pull them off at once.]

TREATMENT OF CHRYSANTHEMUMS AFTER BLOOMING IN A GREENHOUSE.

I HAVE about forty varieties of Chrysanthemums, half of them are large sorts and the others Pompons. They have just finished flowering in a greenhouse, and have been cut down one or two days since. They are throwing up a great many healthy suckers. Now, I want to know what is the proper treatment to secure fine plants for next winter? Should they remain in the greenhouse, or would they do in a wooden garden-frame on cinders, with some mats for protection? The plants were all grown from cuttings last spring from Mr. Bird's nursery. Ought they to be grown from cuttings taken now, or would it be better to divide the roots, and when?—MANCHESTER.

[After blooming, all sorts of Chrysanthemums and Pompons will do much better than in a greenhouse, either in a cold frame or plunged close to a garden wall, to be covered with mats and straw in severe weather, as we had to keep them for many years. They do better if the balls are turned out of the pots, and plunged in some light stuff, not wet or dry. Two days before plunging them, however, the pots should be well watered, and they should not receive more water till the end of March. The glass should be off entirely every fine day the whole winter through, and every night too if one was sure of the weather. Heavy rain is worse for them than a little frost. The way they keep Cauliflower plants for spring planting is another good way for Chrysanthemums. The reason for such care is not at all for fear of frost killing them, but to nurse up the brood of suckers for making the best cuttings of them in April. After the best of them are made into cuttings the balls may be lifted, and each ball might be divided into so many pieces, according to its size, and all shoots which are then longer than 3 inches may be cut down to the ground, and the pieces planted in the open ground for three or four months. But the very oldest way is yet the best way of propagating them for private use—that is to say, get stout, firm, stocky, suckers, with 3 inches of rooted parts from the old balls at the end of March, and put them three and three in No. 48-pots to begin with.]

GEORGE STEPHENSON AS A HORTICULTURIST.

To young men faltering or struggling with opposing difficulties, Stephenson's life gives lessons which should supply fresh vigour. No beginning could have been more humble than his; but he persevered. He had determined to learn, and he did learn. "To such a resolution as his, nothing really beneficial is denied." The whole secret of his success in life was his careful improvement of time, which is the rock out of which fortunes are carved, and great characters formed. He believed in genius to the extent that Buffon did when he said that "Patience is genius," or as some other thinker has expressed, when he defined genius to be the power of making efforts. But he never would acknowledge that he was a genius, or that he had done anything which other

ually laborious and persevering as himself could not have
lished. He repeatedly said to the young men about him,
I have done—persevere."
ery step of advance which he made was conquered by
labour." . . . "Whether working as a labourer or an
r, his mind was always full of the work. He gave him-
thoroughly to it. Like the painter, he might have said
had become great by neglecting nothing."

did all thoroughly and honestly. When a workman, he
mind and energies into his work; and when a master,
his conscience and character into it. The battle which
ht for the locomotive would have discouraged most other
ut it only served to bring into prominence that energy and
ination which formed the backbone of his character.
ding engineers of the day were against him, without ex-
; yet he did not despair. He had laid hold of a great
nd he adhered to it; his mind was locked and bolted to
sults. "I put up," he says, "with every rebuff, deter-
not to be put down;" and it was this determined purpose
secured the triumph of the locomotive.

ards the close of his life, George Stephenson almost entirely
ew from the active pursuit of his profession as a railway
er. At home he lived the life of a country gentleman, en-
his garden and his grounds, indulging his love of nature,
through his busy life had never left him.

ook an active interest in horticultural pursuits, carrying
em the same inquiring and inventive spirit and the same
ined persistence which formed so large an element of his
ter. He was now as eager to excel all other growers of
plants in the neighbourhood as he had been to surpass his
villagers in the production of gigantic Cabbages some thirty
efore. He had a fine house built, 68 feet in length, and
y 140 feet. The workmen were never idle about the gar-
d the additions to the structures proceeded, until at length
no fewer than ten glass forcing-houses, heated with hot
which he was the first to introduce into that neighbour-
At one of the county agricultural meetings he said that
nded yet to grow Pine Apples as big as Pumpkins.

only man to whom he would "knock under" was his
Paxton, the gardener to the Duke of Devonshire, and he
old in the service and so skilful, that he could scarcely
beat him. Yet his Queen Pines did take the first prize
ompetition with the Duke, though this was not until
after his death, when the plants had become more fully
His Grapes also recently took the first prize in competi-
ith all England. He was extremely successful in pro-
Melons, having invented a method of suspending them in
of wire gauze, which, by relieving the stalk from tension,
nutrition to proceed more easily, and enabled the fruit
more freely and ripen thoroughly.

took much pride in his growth of Cucumbers. He raised
ery fine and large, but could not make them grow straight.
hem as he would, notwithstanding all his propping them
mouring them by modifying the application of heat and
mission of light for the purpose of effecting this object,
ould insist on growing in their own crooked way. At last
a number of glass cylinders made, into each of which a
g Cucumber was inserted. Thus restrained, the unwilling
elded to his guiding hand. Carrying one of the new pro-
into his house one day, and exhibiting it to a party of
, he told them of the expedient he had adopted, and
gleefully, "I think I have bothered them noo!"

was unsuccessful in his attempts to keep bees. The cause
re was a puzzle; but one day his acute powers of obser-
enabled him to unravel it. At the foot of the hill on
he resided he saw some bees trying to rise from amongst
ss, laden with honey and pollen. They were already ex-
d, as if by long flying, and it then occurred to him that
ight at which the house stood above the bees' feeding-
rendered it difficult for them to reach their hives when
laden, and hence they sunk worn out with the effort. He
the case to Jesse, the naturalist, who concurred in his view
the cause of failure, and was much impressed with the
s of observation which had led to its solution.—L.,
ican *Gardener's Monthly*.)

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event Nails Rusting.—The rusting (and consequent
ng) of nails employed to fasten the branches of fruit trees,
walls can be prevented in a great measure by driving into the wall at the same time with the nail, and in contact with it, a small piece of zinc.—(*American Patent Office Report*, 1861.)

GAZANIA SPLENDENS AS A BEDDER.

After all that has been said against Gazania splendens as not good for bedding purposes, I must still uphold it. With me here (north of Dublin), it has been the most attractive bed in the garden, admired by every one who saw it. They were planted out the third week in May, and from that time to the 12th of November it was the most showy bed in the garden. The chief thing to aim at is to get the plants on forward before turning out. In short, mine were in full flower when planted out. And as regards the closing up of the flowers, I had no occasion to follow Mr. Beaton's plan, for they were constantly open, although raining for days together, and as beautiful as ever, and not at all closing at nights. I intend using it on a much larger scale next year.—E. Welch, *Gardener to the Bishop of Kilmore, Cavan.*

EDGES FOR WALKS.

Where gravel walks are made through lawns or edged with grass, would it not be a good plan to insert narrow strips of slate along the edges, so that the walk may be salted to kill the weeds without damaging the grass edge, the slate being just level with the gravel?—B.

[A better plan has been in use in some places, which is to lay narrow strips of slate flat under the edge of the turf along the walk; then the edge of the verge or turf cannot root out into the gravel, and no weeds will come that way—that is, from the rooting of the grass, and when the walk is salted the grass takes no hurt. The roller would either level your slate with the gravel, or else leave a rib of gravel there. You are aware, of course, that salt encourages weeds in some walks. It is an old saying, "Kill ten weeds with salt, and twenty weeds will come to the funeral."]

PRUNING THE PEAR TREE.

Of all our hardy fruits, there is, perhaps, none which is more generally mismanaged, with regard to pruning, than the Pear. In our perambulations through the country, we too generally find both espalier and wall trees encumbered with a thicket of long barren spurs, producing crops of most luxuriant breast-wood, which is annually removed, but to be succeeded by another equally useless growth of shoots. In most old gardens we find large Pear trees, which are mere sterile incumbrances, and it has often fallen to our lot to have heard the border or the climate roundly abused as the cause of unproductiveness, when the main fault has been the injudicious treatment which the trees have received from the hands of the pruner. Success in obtaining fruit must, however, after all depend upon favourable springs for the blossoms to open and set; but it is in the power of the judicious pruner always to have his trees in a productive state, just as much as the unskilful ones succeeded in perfecting their abortions.

We often find the Pear trained in the fan-shaped manner—a mode most ineligible for it. For wall trees there is no plan so good as horizontal training. We have ourselves adopted a mode which we find answers admirably; it is, to train a single shoot till it reaches the top of the wall, then two horizontal branches, and from these pendent equidistant branches on each side of the stem—thus (*fig.* 1). We find that in all fruit trees the finest produce is yielded at the extremities of long branches, from the sap being more highly elaborated. This mode of training gives this advantage in an eminent degree, and the pendulous branches are very fruitful. Trees thus trained, and alternating with horizontally trained ones, have a most pleasing effect, both in a useful and artistic sense.

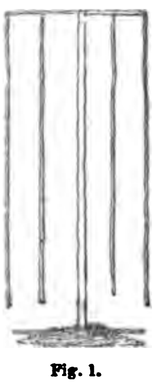
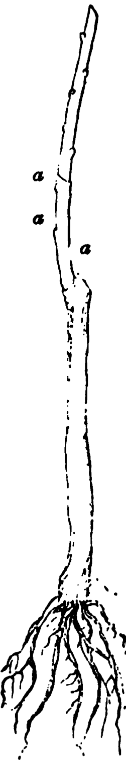


Fig. 1.

To balance the energies of his tree must be the great aim of the pruner; he must endeavour to arrive at the happy medium between weakness and excessive vigour, by checking the strong and encouraging the weaker growths; and whatever the subject with which he has to do may be, he must ever bear in mind the importance of having no more shoots than can be fully exposed to the action of light; this, in our climate, is of an importance not to be overrated, seeing what a large proportion of dull, damp, sunless, suicidal days our summers are made up of. The continental gardeners, particularly the French, with all their advantages as to steady summers, and more genial suns, attach great value to reducing the amount of summer growth by timely pinching, or preventive pruning, and were the system, with root-pruning, more generally



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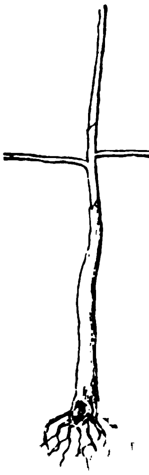

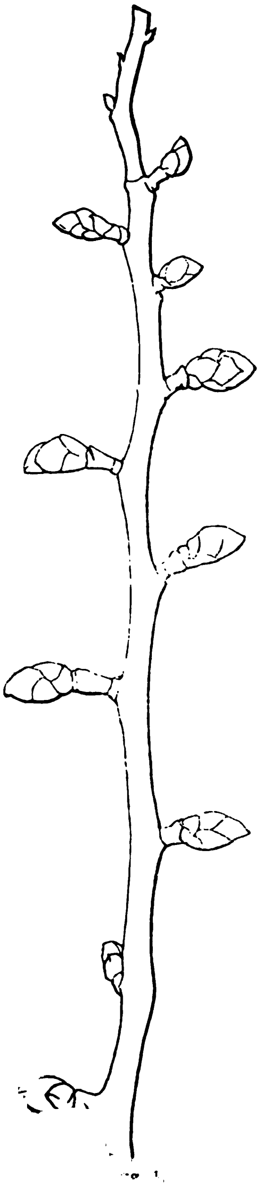

[illegible] results must follow. Having premised thus much we will now proceed to explain:—firstly, the formation of the horizontally trained tree; secondly, the mode of [illegible] management of the [illegible] thirdly, the [illegible] or quenouille mode of training; fourthly, the pyramidal or modern French mode; these three modes comprising the most valuable and useful forms in which Pear trees are trained.

Fig. 2 represents a one-year-old or maiden Pear tree, which it is intended to train horizontally. To effect this, it must be shortened at the time of winter pruning to three buds, *a*, *a*, *a*, one of which is to form the central stem, and the other two the bearing side branches. The middle shoot must be trained perpendicularly, and the other two may at first be laid at about an angle of 45°, to be brought to a right angle with the main stem at the next winter arrangement. The following season our tree will be represented by *fig.* 3, and the centre shoot must again be shortened to three buds, leaving about a foot or 14 inches between them and the lower branches formed in the previous year; the buds not intended to grow should be rubbed off. If the central shoot grows vigorously another pair of horizontal branches may be obtained by pinching it at the proper distance, at midsummer. This is very desirable, as you thus get two sets of shoots for one, in the same space of time—an object of much importance in furnishing a wall. A repetition of this course of treatment will furnish the space allotted, whether of wall or espalier rail.

Fig. 4 represents a two-year-old shoot, with naturally-formed blossom-buds. The fruit of the Pear and Apple is produced upon short studs or spurs, which proceed laterally and terminally from the main branches. To have the branches regularly covered with fruit-spurs must, therefore, be the object of the pruner. In the second year after the shoots which are to be the bearing branches are formed, the buds along them will produce shoots which may be treated in two or three different manners, with the same object in view. The old practice was to allow them to grow a considerable length, and then prune them back almost to their base, but from the crowded confusion in which such wood had grown, the leaves could only imperfectly perform their functions, and instead of organising fruit-buds for another year, another crop of barren shoots was generally produced. It is now found more judicious to stop them when they have attained the length of 2 inches or 3 inches; the result of this is, that embryo fruit-buds are formed at the base of each shoot so treated. We have also successfully practised the following mode—namely, when the shoots have grown to 9 inches or a foot in length we break them through, leaving them suspended by a portion of the bark. The light that is admitted to the unmutilated base-leaves increases their elaborative power, and the sap is partially repulsed at the fracture, to be expended in forming embryo fruit-buds, two or three of which will be found at the base of each shoot in the autumn

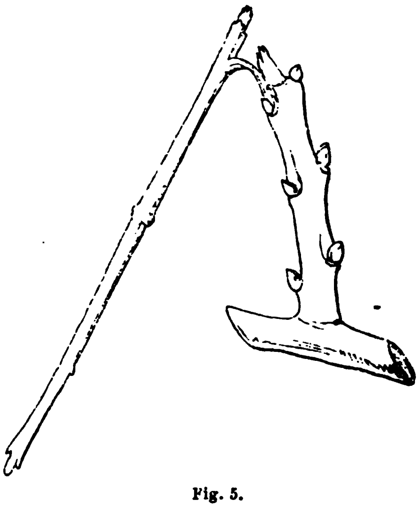

Fig. 5.

(see *fig.* 5). Careful root-pruning will always control vigour and tend to induce fruitfulness. A watchful eye must be kept to have the fruitful spurs short and close to the wall, without which caution they will elongate and look unsightly, exposing the blossoms to greater risk of injury from frost, by removing them from the shelter of the wall. In *fig.* 6, *a* represents a spur from which a fruit was produced last year. At its base will be seen an embryo leaf-bud, *b*, to which it must be cut back; this will, in the ensuing season, become a blossom-bud: *c*, which will produce fruit in the third year, other circumstances being favourable, and the process of shortening must again be repeated.

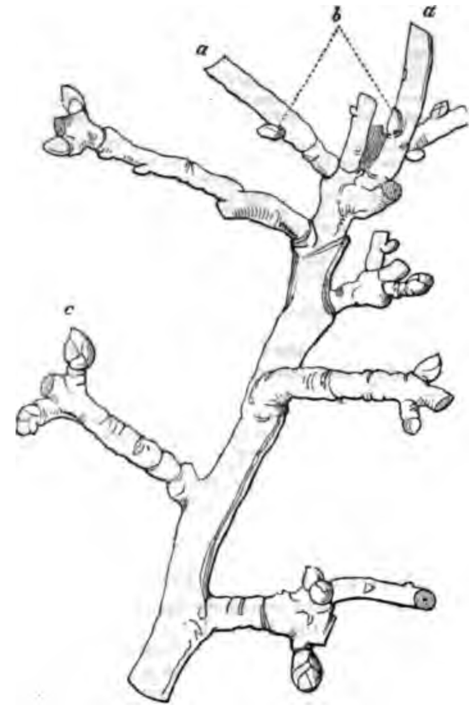

Fig. 6.

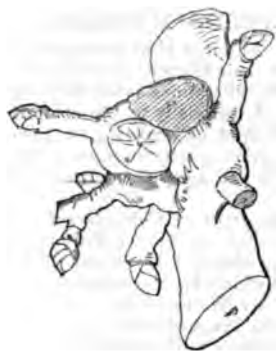

Fig. 7.

If spurs become long and do not indicate buds at their base, they may be cut back, leaving a shoulder (*fig.* 7), from which a bud, or buds, are almost sure to proceed in the following spring. These observations apply to the Pear tree whether against a wall, an espalier, a pyramid, or pendulous-trained tree.

The quenouille or tying-down system has long been practised in continental gardens, and it is one which was also adopted long ago in the garden of the Horticultural Society of London. From a central stem tables of shoots, at regular distances, diverge, and are trained down to a circular hoop, to which their points are fastened; during the summer all the young shoots, excepting the leading one, are bent and tied down, to check luxuriance and induce the formation of fruit-studs at their base, to which, at the winter thinning, they are pruned back. We have practised this plan extensively, with the exception that we fracture the summer shoots instead of tying them down, for the good effect of which we again refer to *fig.* 5. The word *quenouille* is French, and signifies a distaff, in allusion to the shape of the tree.

Pyramidal training, as its name implies, presumes a tree to be in the shape of a cone, or pyramid; and to be perfect, it should be clothed with fruit-bearing spurs from its base to its summit. As it is the most natural form in which Pear trees can be trained, so is it also the most advantageous, by the very equal amount of light which is afforded to the lower, as well as to the upper, branches and leaves. It is of moment, in this sunless climate to adopt such a mode of training as will expose the largest surface of foliage to the direct action of the solar influence; and, next to wall-training, no other plan affords this advantage in an equal ratio. Another great advantage is the economy of space, thus enabling the amateur, with a few rods of ground, to combine the multum of horticultural interest with the minimum of space. To those who would do this, we earnestly recommend the perusal of our friend Mr. Rivers of Sawbridgeworth's admirable little treatise, "The Amateur Fruit Garden." He strongly recommends Quince stocks for pyramidal Pears, and certainly, in situations where they flourish, they are excellent; but on many dry, gravelly soils they only languish and die, this stock requiring a strong, moist, unctuous loam to grow in. In such soil Pears or Quince stocks, root-pruned so as to become a mass of small hair-like fibres, and the shoots pinched on the plan of M. Cappe (see *Gardeners' Chronicle*) are interesting, satisfactory, and beautiful objects.

We will suppose a young tree planted to form a pyramid. In the first year it will put forth four or five young shoots. Select that which is most suited for a leader, and pinch the points of all the rest when they have grown to the length of 2 inches. Should they push again repeat the process, making occasional exception in favour of shoots which are too vigorous, and taking care not to pinch the shoots at the base of the tree so closely as those of the upper part, in order to induce the pyramidal form required. Sometimes the pinching severely causes the young shoot so operated upon to die off, and converts the embryo spurs at its base into shoots. This is, however, the exception rather than the rule, which is, that the shoots so pinched remain stationary and form fruit-spurs at the base. A few of the shoots may require a little regulation by tying out when the tree is young, so as to insure regular shape.

The management of Pears as standard orchard trees has been so often explained, and is so generally understood, that we do not think it necessary to advert to it in this paper.

THE APPLE.

The Apple is so similar in its mode of bearing to the Pear, that it would be mere tautology to illustrate it. The mode of training, too, which is most generally in use (the horizontal) is common to both fruits, and need not be again explained. But, although this is the case, we are convinced that the pyramidal, or even the quenouille, mode, would answer admirably if the kinds were worked upon the dwarf or paradise stock, and treated as directed for the Pear, both as to summer and root-pruning. Such little symmetrical pyramids of fruit are most interesting objects, and have the concomitant advantage of doing little injury to the neighbouring crops.

Some years ago there existed, in the garden of the Horticultural Society at Chiswick, a row of Apple trees (standards), the points of whose branches were pulled down by strings, and which were trained in the shape of a balloon; they were pretty and very fruitful. Other modes of training might be adverted to, but as many of them are more fanciful than useful, the reader is referred to Loudon's "Encyclopædia of Gardening," in which full descriptions will be found.

When treating of pendulous training, we omitted to mention the good effects of it on a number of fruit trees at Spring Grove, then the seat of Sir Joseph Banks. It was here, if we mistake not, that we first saw it adopted as a system, under the personal direction of that talented and erudite philosopher. His trees were trained up one side of a wall, over the coping, and down the other.—H. BAILEY, *Gardener, Nuneham.*

WALL BORDER FOR PEACHES.

I HAVE erected a wall for the purpose of growing Peaches and Nectarines, the level of the garden being 3 feet above the level of the ground on the outer side; the wall is built upon arches and the soil is a strong loam. I shall feel obliged if you will inform me if it is necessary to prepare a border by throwing out the soil, and placing at the bottom a quantity of stones or brick-ends for drainage. I wish also to know the best mode of making the border to insure good plants and fruit.—J. E. S.

[You ought to have stated what the subsoil of your garden consists of, and, also, whether it inclines to the south or any other quarter; or, perhaps, it is quite level. If you have a clay subsoil, then it will be absolutely necessary to remove the soil and place under it a layer of stones or brickbats at least from 6 inches to 9 inches thick. In the front of your border you ought to have a good open drain below the bottom of the border, and that bottom should incline to it so that all the superfluous water in wet seasons should run down into the drain. Then, if the subsoil is clay, or even gravel, the roots of the Peach and Nectarine trees should be prevented running down into it; for, if they do, the trees will soon canker and whole branches die off suddenly. The best preventive for such a catastrophe is to lay upon the drainage a coating of concrete, 3 inches, made of lime and sand, made into mortar and well rolled. Whatever may be the subsoil, it is still advisable to form the border systematically in order to have healthy trees and good fruit. The soil you state is a strong loam. Soils of that character are naturally retentive of moisture, and that is another reason why you should drain the soil effectually in the manner described. The soil would be much improved if it was mixed throughout with old lime rubbish, bits of bricks, or small stones. Such a mixture would keep it open and allow the roots to run amongst it more freely. Stone fruits of all kinds do best and live longest in a calcareous soil providing it is of a good depth. Such being the fact, the addition of lime rubbish supplies a strong soil such as you say yours is, with that substance so useful to them.]

THE ROYAL HORTICULTURAL SOCIETY.

At a Meeting of the Royal Horticultural Society, Dec. 30, C. W. Dilke, Esq., V.P., in the chair, the Chairman addressed the Meeting on this occasion relative to the great loss the Society had sustained by the lamented death of its late President H.R.H. the Prince Consort, and read the spontaneous and gracious communication of Her Majesty to the Society, a copy of which appeared in our Number of last week. The following address of condolence to Her Majesty, prepared by the Council, and forwarded in the usual way, was also read:—

ADDRESS FROM THE ROYAL HORTICULTURAL SOCIETY TO THE QUEEN.

"May it please your Majesty,

"We, your Majesty's dutiful subjects, the Vice-Presidents and Members of the Council of the Royal Horticultural Society, humbly approach your Majesty in your deep affliction, trusting that our profound respect for the memory of His Royal Highness, our late lamented President, and our loyal devotion to your Majesty, may entitle us to offer our tribute of condolence and sympathy.

"While, in common with our fellow subjects, we grieve the loss of His Royal Highness to the nation, and as the Consort of your Majesty, and while with others we respected and admired his character, the kindly courtesy which marked his intercourse with the Royal Horticultural Society had generated amongst us feelings of personal attachment, which are now followed by deep and heartfelt sorrow for his loss.

"In our late President we have to mourn one who—when the Society which we represent was on the point of extinction—raised, revived, and guided it through difficulties, which he alone would have enabled it to surmount, and it is with the deepest gratitude that we acknowledge our obligation to His late Royal Highness for assistance given at a period when he must have been convinced that laborious personal exertion on his part could alone restore this Society to prosperity.

"Although the present condition of the Society is such, that the Gardens at South Kensington constitute a worthy monument of the genius and skill of our late President, we cannot but perceive that our work is not yet finished; that while great difficulties have been overcome, much remains to be accomplished, and that we have to lament the loss of our President at a moment when his directing mind and fostering care are doubly necessary.

"We humbly assure your Majesty that it will be our unceasing endeavour to complete the various unfinished designs of our late lamented President, and that we feel, by executing them with fidelity, we shall best testify the profound respect we entertain for his memory.

"Whilst we bow submissively to the Divine will, we earnestly pray that He who has smitten may also heal, and that your Majesty may experience in this hour of bitter trial the fulness of those consolations which The Comforter alone can give."

The following, on which the reader's heart will furnish a just commentary, is a copy of an autograph letter from His Royal Highness the Prince of Wales to the Council of the Royal Horticultural Society:—

"Gentlemen, "Osborne, Dec. 28th, 1861.

"[illegible]ted with overwhelming grief, and able, at present, to turn her thoughts but to one object, the Queen, my mother, has constantly in her mind the anxious desire of doing honour to the memory of him whose good and glorious character the whole nation in its sorrow so justly appreciates.

"Actuated by this constantly recurring wish, the Queen has commanded me to recall to your recollection that Her Majesty has been pleased to [illegible] Great Exhibition of 1851, which it was intended to erect in the New Horticultural Gardens.

"The characteristic modesty and self-denial of my deeply lamented father had induced him to interpose to prevent his own statue from filling that position, which properly belonged to it, upon a memorial to that great undertaking which sprung from the thought of his enlightened mind, and was carried through to a termination of unexampled success by his unceasing superintendence.

"It would however now, Her Majesty directs me to say, be most hurtful to her feelings were any other statue to surmount this memorial but that of the great, good Prince, my dearly beloved father, to whose honour it is in reality raised.

"The Queen, therefore, would anxiously desire that, instead of her statue, that of her beloved husband should stand upon this memorial.

"Anxious, however humbly, to testify my respectful and heartfelt affection for the best of fathers, and the gratitude and devotion of my sorrowing heart, I have sought, and have with thankfulness obtained, the permission of the Queen my mother to offer the feeble tribute of the admiration and love of a bereaved son, by presenting the statue thus proposed to be placed in the gardens under your management.

"I remain, Gentlemen, yours,
"ALBERT EDWARD.

"To the Council of the Horticultural Society."

At a special meeting of the Council, summoned on Thursday, Jan. 2, to receive this letter, the following resolution was agreed to:—

"That under the lamentable and affecting circumstances in which the Council are placed by the irreparable loss which they, in common with the nation, have sustained by the decease of their late President, the gracious offer of His Royal Highness the Prince of Wales should be accepted, but at the same time he should be assured that they contemplate the loss of Her Majesty's statue with regret."

RETURN OF MR. FORTUNE.

We have the pleasure to announce the return to this country of Mr. Fortune from the East. He arrived in London on Friday last in excellent health, and has brought with him many rare and valuable plants, several of which will excite great floral interest from their being adapted for open-air cultivation. Among them are new Lilies, Convallarias, Primulas of extraordinary character, and a rich collection of variegated plants which have not hitherto been introduced.

ENTOMOLOGICAL SOCIETY'S MEETING.

The December Meeting of the Entomological Society was held on the 2nd of that month, the chair being occupied by the President, J. W. Douglas, Esq. The alterations lately made in the Society's apartments have tended materially to the comfort of the members, and will have the effect of rendering the proposed removal of the Society to other quarters unnecessary. The Meeting was very fully attended, and many very interesting novelties were exhibited.

Mr. Barnard brought an extensive series of Coleoptera from Smyrna; and Mr. S. Stevens a beautiful collection of Butterflies formed by Mr. A. R. Wallace in the island of Mysol near New Guinea. The announcement with which he accompanied this exhibition of the probable return of Mr. Wallace from the islands of the eastern archipelago (where he has made such large and valuable collections in various departments of zoology), in the spring of next year, was received with regret, although it was stated that he would probably leave one or more collectors behind him.

Mr. Adam White exhibited some specimens of a species belonging to the Neuropterous genus Mantispa, of which a considerable number of specimens had been developed in the entomological-room of the British Museum, in a very remarkable Wasps'-nest lately received from Monte Video, formed by Myrapetra scutellaris, a species which Mr. White asserted is a honey-gatherer. On a section of the nest being made, it was found to consist of nearly twenty combs formed of a papyraceous substance; and although no larvæ or pupæ of the Wasps were found in it, a number of the Mantispæ were found alive, and which exhibited their natural ferocious habits, seizing and preying upon small insects offered to them. Mr. White also called attention to a small Beetle belonging to the family Buprestidæ, and differing from every species hitherto known of that extensive family, in having two short horns in front of the head. Mr. White proposed to form it into a new genus allied to Anthaxia.

Mr. Machin exhibited a specimen of Æthia emortualis, a species [illegible] Pyralidæ taken in Epping Forest. The species is rare in southern Europe, and only a single specimen had previously been taken in this country near Henley-on-Thames.

Mr. Waterhouse read a paper on the British species of the genus Gyrophæna belonging to the Coleopterous family Staphylinidæ. He also exhibited a specimen of Ischnoglossa corticina, a species of the same family hitherto unrecorded as British.

Mr. Francis Walker communicated a paper containing descriptions of new species of exotic Lepidopterous insects in the collections of Messrs. W. W. Saunders and Fry.

Mr. D'Urban exhibited a beautiful series of Lepidopterous insects formed by himself in South Africa. The collection contains a number of new species of Pieridæ, Polyommati, &c.

A paper by Mr. R. Trimen, of Cape Town, was also read, containing descriptions of new species of Butterflies inhabiting South Africa, belonging to the families Satyridæ, Lycænidæ, and Hesperiidæ. It is to be feared that some of these supposed new species have been previously published in Sweden by M. Wellengren.

The President announced that in compliance with a wish generally expressed by the members of the Society, the chair at the monthly Meetings would henceforth be taken at seven o'clock in the evening instead of eight o'clock as heretofore.

NEW BOOKS.

The Cottage Garden.[*]—It has been said that an Irishman promptly undertakes to do anything and everything; that an Englishman is similarly self-reliant if well paid for the attempt; but that a Scotchman will undertake no work that he does not know he can execute well. The little work before us is no exception to this estimate of our northern friends, for Mr. Anderson has composed it excellently. It was originally a lecture delivered upon cottage gardening, was published at the request of his audience, and is now in its second edition. It gives concise correct directions for the management of the culinary vegetables, fruits, and flowers usually cultivated by amateurs in small gardens as well as the kinds to be preferred. It is a good and safe guide.

The Historical Finger-post.[†]—This is a most useful book, but its title does not do it justice. A finger-post only points to what you want to arrive at, but in these pages are contained the very objects themselves. It is a very excellent collection of brief explanations of events and things in history, science, &c., which writers upon such subjects are obliged to suppose their readers understand. Thus such writers talk of "The Seven-years War," "The Ban," Argentine Republic, Sbirri, Elixer of Life, Patient Grizel, Catching a Tartar, Dies Iræ, Jesuits' Bark, Bawbee, &c., &c., and nine out of every ten readers proceed without knowing, though they wish to know, and must know before they can understand the subject thoroughly, what those events and things are. Now this book explains what they are, and we strongly recommend it to our readers as a cheap mine of useful information.

GENERALLY USEFUL CULTIVATORS.

(*Continued from page* 191.)

COW-MANAGEMENT.

I must suppose there are many readers of The Journal of Horticulture in situations similar to my own; some, doubtless, much better acquainted with the subject in hand than myself. Others there may be not so well acquainted; and it is to them that these preparatory remarks are intended, or to such as may from time to time enter their ranks.

It has been frequently stated by your able writers, that it is not the vast amount of knowledge that is required to be successful in this or that undertaking, but the diligent and proper carrying out the knowledge already obtained and the knowledge daily acquired. In these days of railroad travelling the commercial man must be systematic and punctual. When he leaves his hotel in the morning, he knows his business must be done by such an hour, otherwise he loses the train to his next town of business, which involves another night's expenses, reduces the profits for the day, and disarranges the next day's advices. So it is with the gardener, generally useful cook, and maid of all work. "The soul of business is punctuality;" and the man that wishes to make his undertakings pay must keep railroad time.

Yes, and the clergyman and the doctor in every village, and the merchant and manufacturer with residences in the country, can farm their few acres of land, deriving all the advantages of country life, and make it pay; and the gardener, either single-handed or otherwise, can take the whole management on his own responsibility, and his master will pay him for it.

We will suppose a gentleman struggling on with the difficulties generally complained; and John Jones the gardener, having picked up a pair of magnifying-glasses, and, trying them on, fancies he can see objects plainer than heretofore, says to his master that, with his permission, he will undertake the management of the whole by placing the odd man or boy at his disposal. And we must suppose that there are two at least, if not three cows (and there is more advantage in keeping three cows than two if there is land sufficient); and although there is plenty of grass in most places, yet he gives the cows a little hay at milking-time morning and evening, but let it be eaten up clean each time. If you do not find any increase in milk there will be an increase of cream, and the butter will be of a better quality, and the cows will be much healthier. If the hay is at all brown in the middle of the rick, give the cows the outsides —it is better for milch cows, and let the coachman have the brown for his horses, you will please him by so doing. Should your fields be small, and one of them lies dry and sound at bottom, and if facing the south the better, keep the cows out of that as much as you can. If the spring should be at all favourable the young grass will soon spring up with the old, and the hay that is used now will be saved in the spring, and then you can turn out the first cow that calves. The cows can be changed to advantage in the other fields as often as you like.

The man, perhaps, is an indifferent milker, but here practice will make perfect when you understand the theory; and the theory that I shall teach will be nothing more than I practise. And I would wish to impress upon the mind of the milker that cows (like almost everything else), are just what they are made to be by the treatment of their attendant; and if one uniform kind of treatment is pursued it soon becomes a habit, which is not in all instances desirable. I knew a young cow that had been accustomed to be milked the first out of eight or nine; and being a little petted by the one that always milked her, she got at last that if by chance or design either of the others was commenced first, she would go straight and drive the cow away (they being all loose in a barton). It was necessary to break the rule, and the cow soon forgot it. Kindness is in all ways commendable, but there must be a degree of firmness with it. I tie up the cows during milking; and before putting the pail under the cow I rub the udder well with the hand. It is a cleanly habit, as sometimes from the cows lying down, or in the summer getting into muddy ponds, dirt gets attached to the udder; but I think there are other advantages.

On commencement do not wet the teats with the milk, as is generally the practice. You will be able to milk quite as well without it, and it is a dirty habit to say the least of it. More sore teats arise from this one practice alone than from all other causes. In the summer the teats are saturated with the oily milk, and directly the cows are out of the house the flies are swarming round their udders. The cows with their rough tongue lick them off, and in a short time the skin gets broken, the teats become sore, the cow does not stand to be milked, often upsetting a portion of it, and as often not properly milked out, and, as a matter of course, the quantity of milk decreases. In the winter, the teats being wet, and during frosty weather, the same effects are produced, and the same consequences follow. Having proceeded so far, press your head tight against her flank, making her stand in a proper position, so that you can get at the hinder quarters with ease. Then begin milking, and milk away as though you were determined to do it in so short a time. Use the whole of your hand as much as possible till the very last drop, and not dally over one cow strapping with the finger and thumb the time you ought to have milked three. It is not the waste of time so much as the bad habit the cows get into in not giving their milk down.—The Doctor's Boy.

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[*] *The Cottage Garden, and How to Manage It.* By James Anderson, Meadowbank, Uddingston. London, S. O. Beeton.

[†] *The Historical Finger-post*, a Handy Book of Terms, Phrases, Epithets, Cognomens, Allusions, &c., in Connection with Universal History. By E. Shelton. London, Lockwood & Co.

A FEW DAYS IN IRELAND.—No. 9.

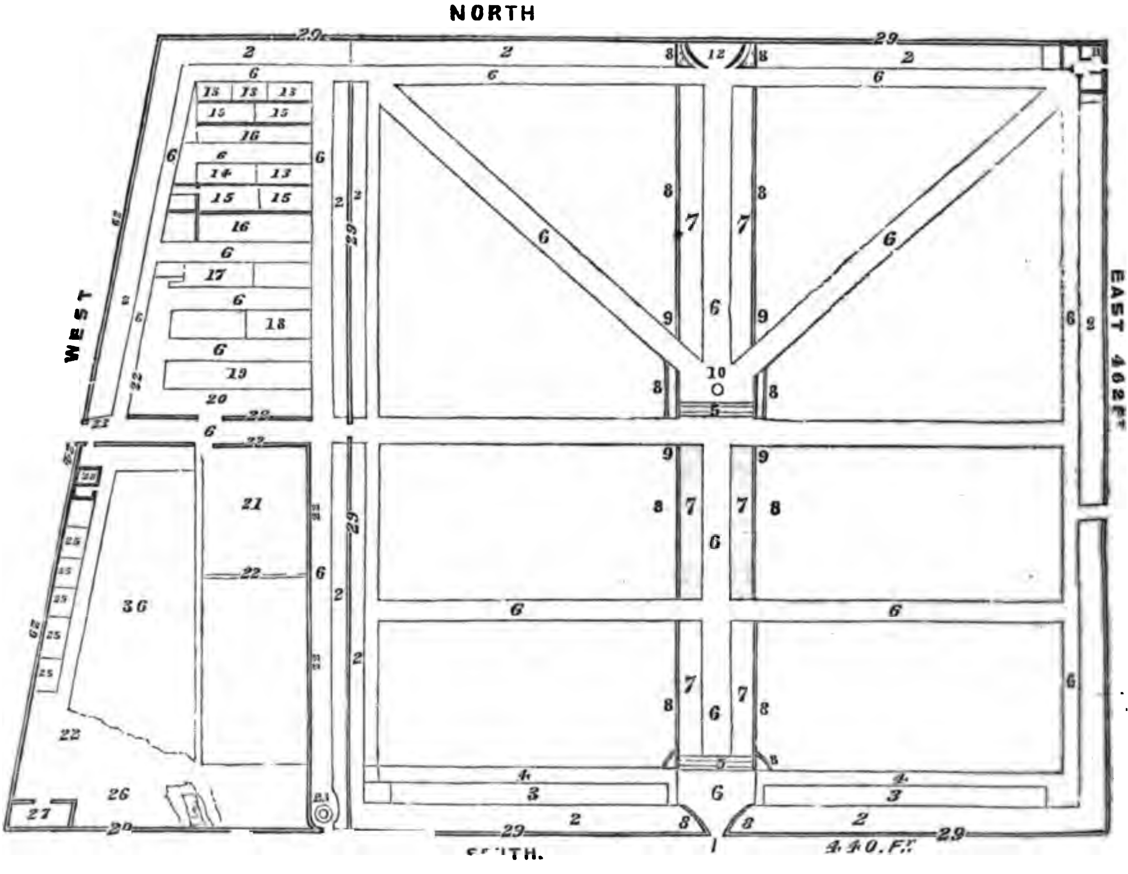
LOUGH CREW.

(Continued from page 257.)

THE plantations are admirably planted, and managed alike for ornament and profit. Crossing the park southwards from the flower garden, with grass far above the ankles (and which in moderate winters Mr. Stewart, the land-steward, assured us the cattle relished better than hay), we entered a fine wood enlivened with drives. On a precipitous corner a fine rockwork had been formed in times gone by, but now too much shaded by overhanging trees. In this wood, and especially by the sides of the drives, the Rhododendron was making a home for itself, and going on travelling and annexing more space as fast as it could. We do not recollect seeing the same travelling habit so fully in operation anywhere else, except at Bicton in Devonshire. The lower branches layer themselves naturally, throw up fresh shoots, which again root, and so the plant travels onward, until, if left alone, vast spaces would be covered. These drives in June must be magnificent. The soil seemed to be a rather stiffish loam, adding another proof, if one were necessary, that this plant will hardly refuse any soil except that of chalk or lime. If we could have spared the time to go a little farther, we might have seen the lake from which the place takes its name.

We now retraced our steps along the valley by a nice walk to the kitchen garden, passing in our way a long row of old Yew trees, looking as if they had formed part of a terrace for some ancient building; and after noticing a few fine trees planted by the present Mr. Naper, some old thorns, and a huge tumulus opposite the garden, which we believe has not yet been dug into or explored, we reach the entrance gate in the middle of the garden on the south side, the garden being placed on the north side of the valley and sloping to the south rather steeply, the road to Old Castle passing its northern boundary. Before entering, we may state that this south wall is mostly covered with Jasmines, Roses, Clematis, and other elegant climbers; that at the south-west corner a rockery and fernery have been made, which will probably be increased, and the purling of a brook adds considerably to its advantages. The chief distinctions in the form of this garden are a fine walk with steps in the middle up the centre, with a Beech-hedge on each side, leaving room for a border of flowers between the hedge and the walk, and then crossing the upper squares by a diagonal walk, which thus gives more variety than if the ground was all in squares. A nice comfortabl cottage for Mr. Milroy, with three apartments below and thre

KITCHEN GARDEN.



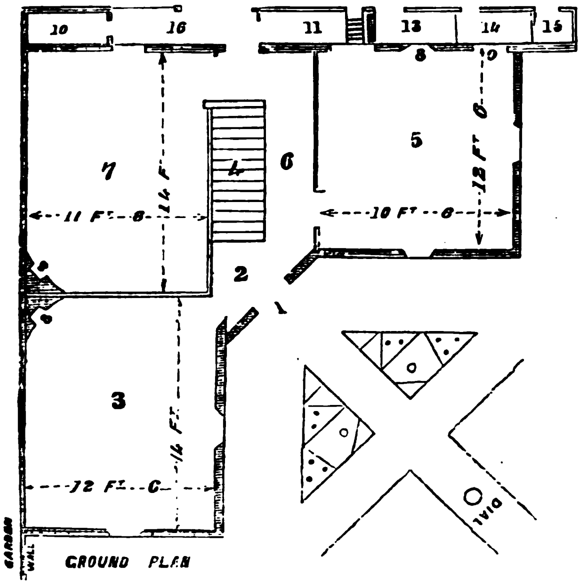
1. Front entrance gate.
2, 2. Borders round walls.
3, 3. Water.
4, 4. Grass walks.
5, 5. Stone steps.
6. Gravel walks.
7. Two ribbon-
8. Beech hedges.
Yew trees.
Dial.
Mound

[illegible] Show house for plants.
[illegible] Back Sheds for tool-room, fruit-room, Onion-room, Mushroom-house, potting shed, fernery, &c.
Vineries.
Vine-border.
Greenhouse.
Pine-stove and Cucumber
Propagating-pit.
Open space for frames.
Melon ground.

22. Yew hedges.
23. Cart entrance.
24. Ground plan of young men's house to be put up.
[illegible] Carpenter's shop, coal sheds, barrow ditto, flower-pots, &c.
26. Soils, pea-stakes, &c., sawpit, &c.
27. Present lodging of young men.
28. Fine Walnut tree.
29. Boundary wall.
0. Large mound with caves underneath.

upstairs, has been but recently built at the north-east corner, the bricks being hard burned, of a creamy colour, the joints a hard brown mortar or cement, and the quoining-stones at the sides and windows, &c., a rich grey limestone or granite—altogether looking very nice even outside (see plans). The necessary outbuildings are lean-to's against the wall.

GROUND PLAN OF MR. MILROY'S COTTAGE.



GROUND PLAN

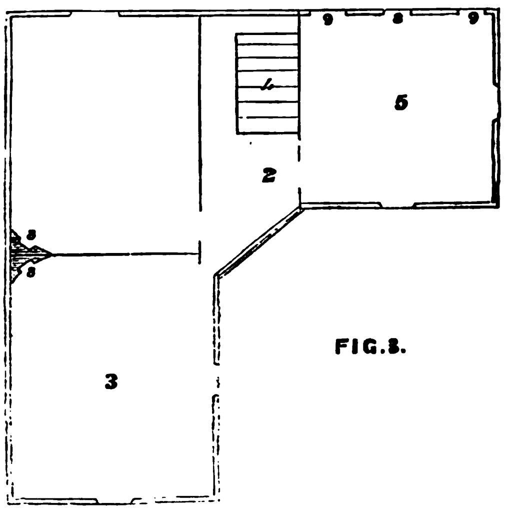


FIG. 2.

1, 1. Front and back door.
2, 2. Lobby.
3. Parlour, with bed-room above
4. Staircase.
5. Living-room, with bed-room above.
6. Passage.
7. Kitchen, with bed-room above.
8. Fire places.
9. Cupboard recesses.
10. Scullery.
11 Larder.
12. Stair to cellar.
13. Wash-house.
14. Coal and wood-house.
15. Necessary-house.
16. Covered way to scullery, larder, and over back doorway.

A few geometrical beds are shown on each side of front doorway.

The centre walk between the hedges is a striking feature, owing to a ribbon-border running up each side. The lower borders are wider than those above, and there is a break where another path passes, and for a space on each side of the dial; but that is not noticed when you stand at either end, and of these ends we prefer to look up from the lower one. The lower half has five rows on each side; the first beginning with Purple Zelinda Dahlia next the hedge, then yellow Calceolaria, Scarlet Geranium (Improved Frogmore or Tom Thumb), Variegated Balm and Lobelia speciosa (true) next the Box-edging, where it always tells when near gravel. The upper half was just the same, only, being narrower, the Dahlia was dispensed with, and the yellow Calceolaria was the first next the hedge. Though these striped ribbons were narrow they were to us the most delightful thing of the kind we had ever met with in Ireland—partly owing to the charming background; partly to the regular gradation in height from the front to the back row; partly owing to each row being kept distinct by a thread and stakes in front of the back ones, but concealed, and yet quite close together without those openings which the engraver made in *fig.* 1, page 131; and partly to every row being perfect and full without a plant missing from end to end. At the break at the dial and steps a space is set aside for trying bedding Geraniums and other things, and nothing is used largely until thus tested.

Though not shown in the plan of the garden, all the cross walks, and side ones too, unless next walls, have a border on the side for espalier and dwarf trees, most of them as yet in a young state; and on several of these there are rows of Pinks, Carnations, Heartsease, &c., and some bedding plants. The two cross diagonal walks from the dial, if riboned, would have a grand effect when you reached that spot from the entrance gate. I expect Mrs. Milroy will take the ladies' most successful means for having the walk so done that comes from the dial to her front doorway, and then our old friend will be obliged to do the other side, just to promote uniformity.

What! go back again to the old fashion of introducing flowers into kitchen gardens! Well, where there is room, we do not much care where we go to see the beautiful, and, provided as in this case, we are not compelled to look on flowers and vegetables at once. Besides, there is a great distance between these striped ribbons and the flower garden at the house, and there is nothing of the ribbon there; so that the style is altogether different. We believe some of the most effective ribbon-borders were made at Trentham in the kitchen garden.

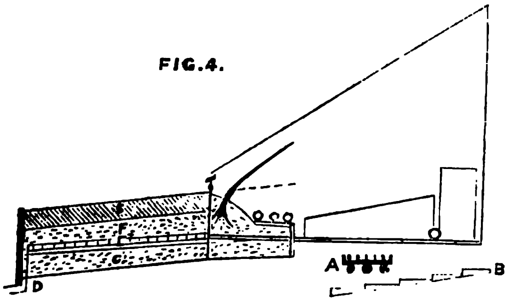
A striking feature in these gardens are four Irish Yews, in the corners near where the cross walks meet, which average individually 19½ feet in height, and though very compact bushes average 14 feet in diameter of head. These fine plants were brought forty years ago by Mr. Naper from Florence Court, along with his keeper, groom, and dogs, all being driven forty miles in the mail phæton. We understand that the original plant of all our Irish Yews is still standing on a hill of Fermonagh near Florence Court, and some 18 inches to 2 feet higher than these at Lough Crew. There are two trees still larger—one being more than 22 feet at Nethes Place, Mauchline, Ayrshire. Are any fine specimens known, grown only to one stem, and not branched from near the base?

The garden is beautifully and substantially walled all round; but, unfortunately, the stone is of so cold and moist a nature that the more tender fruits do not thrive against it. In olden times a thin wall of boarding placed in front of it would have remedied this evil, but in these days of cheap glass a house might be put up for not much more money for Peaches and Apricots, &c. Pears, Plums, and Cherries seemed to thrive admirably, and some trees on east and west walls of Ribston Pippin Apple, Newtown Pippin, and others, were well supplied with fruit, though here, as elsewhere, Apples and Pears were scarce this season.

The garden was well supplied with all the smaller fruit and vegetables, except Asparagus; this had pretty well beat Mr. Milroy. Some twenty years ago the garden produced good Asparagus; but the gardener, who was successful then, when he made fresh beds could not get the plants to grow for the life of him; and every gardener afterwards has been pretty well in a similar fix, though every conceivable plan had been tried—deep trenching, salting, fresh soil, &c. We found some places where old beds were left alone because it was found young beds would not grow. We should like Mr. Milroy and some other friends to give us all the facts they can on this important subject.

The garden is sheltered well on all sides, and all the glass, consisting of vineries, greenhouse, stove, propagating-house, Fern-house, and frames are, all enclosed by themselves, and, the ground being steep, a little attention to drainage will prevent anything like an accumulation of water. We found here, as well as in the garden generally, everything clean and neat and in its own place, for which, indeed, there was ample opportunity from the number and variety of sheds, &c. A nice little fernery had been made behind one of the houses, and there seemed no reason why it should not have been continued the whole way. We found some excellent Grapes on young Vines, and making fine, round, short-jointed wood, and that of most of the best new kinds. Mr. Milroy was much pleased with Lady Downes', and Trentham Black, and Bowood Muscat. There were some fine bunches of all these. The vineries are being thoroughly refurnished with fresh Vines by degrees.

FIG. 4.



a Stage on pipes.
b Stage for pit.
c Rubble of small stones for bottom.
d Drain.
e Concrete.
f Brick rubble.
g Border soil.

These vineries, like most vineries in Ireland, have a pit inside and most valuable things they are either when filled with fermenting matter or otherwise. *Fig.* 4 will give an idea of these houses, and the mode of renewing the borders. These borders are about 16 feet wide outside, and rather better than 4 feet inside. Both inside and outside the roots are prevented going further by a wall. The Vines are all planted inside, the front wall being built on wide arches. A drain runs in front the whole way and well sunk. On the bottom, but higher than the drain, are placed from 12 inches to 20 inches of stones, the larger at bottom and the smaller at top. On that some inches thick of concrete, and then 4 inches of broken bricks and brick rubbish, the finest at top, a little litter, and sods to keep the soil from running among the bricks, and then the soil is put on and the Vines planted. The outside border, however, is not made at once but in the course of several years, adding a bit of fresh as needed. We allude to the soil part. The [illegible] is all finished at [illegible] the space for the [illegible] was not filled, but the turfy soil was so occupied by roots as to say plainly they wanted some top-dressing, and a little bit more added to the width. The wall inside helps to support the inner pipe: three pipes act as flow-pipes on the level, and one behind acts as return. The Vine-roots in forcing will be influenced a little by the heat of the pipes above them. A small stage is placed on the pipes, and a narrow path between that and the pit, for which too there is a moveable stage in pieces, so that pot Vines and other things may be grown below the general crop of Vines and in all open spaces, and fruited there and elsewhere, provided room and heat can be obtained.

This mention of pot Vines brings me to the admirable mode by which Mr. Milroy, when renewing a vinery with new Vines, never allows the roof of the vinery to be uncovered with fruit; but actually obtains more Grapes and of better quality than he could have had from the old Vines. Mr. Milroy, like ourselves, has grown Vines successfully by growing them from the bud one year and fruiting them the next; but he found that they required so much labour and trouble and bottom heat, and then yielded such a moderate produce, that even on the score of economy and profit combined, he found it better to grow two years instead of one. Our friend Mr. Burton, at Hatfield, had the finest crop of Grapes, in pots, from one year's growth we ever saw, and we regret we did not give an account of them and other things; but it is so difficult in the busy season to overtake half of what we wish to get at. Mr. Burton, though so successful, cannot be so without great care and labour, and a good amount of glass devoted to these Vines before they are fit to be hardened off out of doors. As stated above, Mr. Milroy finds it more economical to have two-year-old plants, and, consequently, prepares his plants accordingly.

The plants we saw with fine Grapes still uncut, were struck from eyes in 1859, and grown on in 1860. The buds were inserted in March in the usual way, potted off into four-inch and five-inch pots, and plunged in a hotbed in a frame, using fresh loam, leaf mould, a little sand, and some dried horsedung rubbed fine by passing through the fingers. As soon as they require it, they are repotted into seven-inch, eight-inch, and nine-inch pots, and replaced in the frame again. When the roots are running freely and the plants are about 18 inches high, the points are nipped out to make them stronger and bushier, the side shoots being stopped to one joint; and when the plant makes a fresh leader the pots are removed to the front of a pit, where the pot can stand as close to the glass, and the shoots trained as close to the glass as would be safe, and where the necessary heat can be given them. Plenty of heat and water, with a due proportion of air in bright sunshine, and less of heat and moisture in cloudy weather, are much attended to at all times. When the wood gets brown and firmish, the pots are moved to the front of a south wall out of doors, and when winter sets in they are moved to a safe corner where they may have a little light, and be protected alike from frost and artificial heat, and get neither wet nor dry.

About the new year they are pruned down to three or four eyes, and in March each plant is turned out of its pot, the crocks removed, one crock placed over the hole in the pot, a good handful of fresh soil over that, and then the plant goes back in the same pot filled up with fresh surfacing, well watered, and placed along the front of a vinery just shut up about 50°, and close to the glass, getting only a dash from the syringe until they break, when he disbuds to two, generally preferring two shoots to one, which come slowly but strongly from being broken in a low temperature. A small stake is placed to each shoot and tied gently. If when two shoots are decided on, and one comes stronger than the other, the strongest is stopped that the weaker may get more strength; many are grown with one shoot. When the roots are running into the soil at the bottom of the pots, and the shoots have made three or four leaves, the plants are transferred to fourteen, sixteen, and eighteen-inch pots according to strength and kinds, placing them so that the ball shall be covered, and the pot not be much more than three-parts filled, which will allow of several top-dressings. The soil is much the same as for the borders—fresh turfy loam, leaf soil, lime rubbish, broken bones, charcoal, and a little horse-droppings. If bright sunshine comes the plants are watered; if cloudy, this is not done for several days. As there are, generally by that time, several houses at work, those intended to be earliest are put into the earliest house, and the others into later ones, as on the stages over the pipes, and plenty of water when needed, and

sunlight possible are the chief things to be attended to.
the wood browns the plants are moved to a south wall,
unless in dry autumns, they are not watered. They are
in time, and kept from frost and wet until started into
and fruit.

friend, in addition to many sterling qualities, has been
oted for a racy dry humour that has too much of the
about it to be satirical, than for anything that is generally
eloquence; but he did get eloquent about these Vines
o mistake. "Talk of fruiting within the twelvemonth or
months, have not I done it and got my four or five
es? but what is that to keep a family going when you
a new vinery? Now, from these larger pots and two-year-
ants I get my ten, twelve, fourteen, sixteen, eighteen, and
twenty-two fair bunches, as I had this season in an
en-inch pot as you may see. Am I, indeed, so far behind
iting two years? Look at the host of inquirers of how to
ad Vines. Why do not they get Vines in pots and fruit
year or two, whilst they get new Vines into new borders?
e pots do not bear too heavily the first season, they will
ell a second or even a third season. The other year I
ight bunches from a fourteen-inch pot. In September, as
ood was well ripened, I turned the plant into an eighteen-
ot, placed the pot against a north wall, placed some slates
e mouth slanting to throw the water past, surrounded
t and covered it with leaves and litter, and protected the
and, in the spring, the pot was full of fresh roots, and
ant yielded a heavy crop the next season. This next
, having cleared out a house and fresh planted it, I will,
March, introduce about three dozen of these Vines, one
front and another row farther up, so as to cover the roof;
us I will not miss the crop of the old Vines."

ill be evident that by this longer time being given, the
ty of pits with less or more of bottom heat is greatly
d. We have given such prominence to these Vines that we
next to pass by all notice of the stove and greenhouse
with the expressed hope that such nice plants of moderate
ll find a more suitable place for showing them off to ad-
e as they get older and larger. Among greenhouse plants
ere, in addition to Fuchsias, &c., Acacias, Adenandras,
xis, Boronia, Azaleas, Camellias, Chorozemas, Correas,
, Eutoxia, Erica, Genetyllis, Kennedyas, Pimeleas, &c.
e-foliaged stove plants, the best Begonias, Caladiums,
phyllum magnificum, Crotons of sorts, Dracæna ditto,
hen there were some dozen of kinds of Achimenes and
ias, good plants of Allamandas of sorts, Aphelandras,
s, Clerodendrons, Combretums, Dipladenias, Franciscceas,
ias, Ixoras, Luculia, Marattia, Medinilla magnifica,
notis, &c. Of Ferns, a nice collection of the finer kinds,
the plants are yet small, comprising the best Adiantums,
ogrammas, Cheilanthes; Pteris, such as argyrea, asperi-
tricolor, cretica alba sinuata, and a nice collection of
odiums. A collection of hardy Ferns is also being formed.
were glad to see that it was resolved to build suitable ac-
dation for the young men near the cart gate, which will
ch more airy and free from damp than their present
ce. According to its size, we have every confidence it
made as comfortable as Mr. Milroy's pretty cottage. The
which under-gardeners are penned in many places in
d even, cannot be known or thought about by the pro-
of the estate.

Yew-hedge separating these ranges and frames is about
high, but it has a light appearance from uniform semi-
r openings being formed in it at equal distances near the
In such a position it seemed an improvement to the solid

Among the frames in the Melon-ground rats had been
nd merely to satisfy their love of mischief. They sorely
d us once with Peaches when hard as stones—not eating
but carrying them off and making stores of them. We
very cruel thing done. We caught a gentleman in a
ghted a little straw and just singed him a little, brushed
tar on him, let him out of the trap, and told him to be
Ve did not see the semblance of a rat for some eight

e is a large mound in the compost-yard planted with
and trees; and picking at it accidentally brought the
a passage, which led them first to one chamber and then
, built of stones without any lime or cement, a large
t the top acting as the key of the arch. Various sur-
re afloat as to the object of such structures—interment, concealment, &c. Future explorations may show some connection with the large tumulus referred to, or some old castle in the neighbourhood.

R. FISH.

(*To be continued.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

As the weather is open and mild, all trenching and ridging ought to be pushed on as fast as possible. We would again advise, where drainage is necessary, to get at it without delay. When we see the agricultural world so alive to the benefits it confers on them, it is strange to hear amateurs lamenting over their pining Peach and Nectarine trees and bad crops, and making no effort to strike at the root of the evil. The very worst soil and situation may be improved by drainage, and wall trees of all kinds rendered fruitful by artificial borders. *Asparagus*, if the soil in the bearing bed should become dry, give it a liberal supply of water, so that it may reach the roots; the neglect of this particular is one of the principal causes of unproductiveness, the earth at the roots being very dry, while the top is kept moist by gentle waterings. *Carrots*, where young ones are wanted early prepare a slight hotbed for the purpose, cover it with leaf mould or any light soil to the depth of 6 inches or 8 inches, on which the seed is to be sown, and covered lightly with the soil. A little Radish seed may be scattered on the bed at the same time; but they must be drawn in a young state before they interfere with the growth of the young Carrots. *Lettuce*, where there is a scarcity of the autumn-sown, sow on a slight hotbed or in boxes in a forcing-house; to be afterwards pricked into a frame. *Sea-kale*, as that which was covered first is cut, remove the pots or other coverings to that portion which is uncovered, so as to keep up a succession. The dung and leaves which have been previously used will serve the purpose again if a little fresh be added. Avoid getting upon or working the ground when it is in a sodden state.

FLOWER GARDEN.

On soils that are naturally poor, and where neither fresh mould nor decayed leaves can be had, a moderate dressing of old hotbed dung well decomposed will be useful; but this should be well mixed with the mould the full depth of the bed—say 18 inches, and not carelessly turned in and left in lumps near the surface; for in this case, as noticed before, a gross habit of growth will be promoted early in the season, and as the principal part of the roots would be near the surface in the manure the plants would soon feel the effects of dry weather; whereas, if the manure is well incorporated with the soil, no ordinary amount of dry weather will injure the plants after they once get firmly established. The digging of shrubberies for two or three years after they are planted is beneficial to the shrubs; but after that nothing should be done to disturb the roots near the surface, as the health and vigour of the plants depend in a great measure upon them. As the object in planting is generally to have a quantity of thriving shrubs for ornament, it is an imprudent practice to dig shrubberies, as the operation is not only highly injurious to the trees and shrubs in consequence of destroying a large portion of their most valuable roots, but it also destroys that harmony which should exist in all ornamental plantations. For example: a large shrub surrounded by dug ground, and a similar one on a lawn surrounded by grass.

FRUIT GARDEN.

Where young trees are intended to be planted, the ground should be properly prepared, and no trouble or expense spared to have it properly done, remembering that their future success will very much depend upon how it is effected. Make sure of thorough drainage; and where the subsoil is unkind it should be removed, and replaced with some good fresh loam. Dress the fruit trees that are infested with moss, lichen, &c. Prune, train, and tie in neatly all espalier trees, and clear away all refuse that will not readily decompose to the char-heap, there to be converted into a valuable manure. If frosts prevail stir up the soil well with the hoe or fork close under the walls or fences; such places afford a ready refuge for slugs and other vermin to hide in security. It would be advisable also to shake a little quicklime over the earth thus disturbed.

STOVE.

As soon as potting materials are in due order, a movement may commence among the Orchids and other plants; where shifting is requisite, selecting those which show a disposition to grow.

GREENHOUSE AND CONSERVATORY.

Provide and store in a dry place a supply of heath soil, fibrous loam, charcoal dust, wood ashes, and any other charred refuse, leaf mould, cow and sheep-dung, as such composts will be useful in the coming season. If the weather is unfavourable for outdoor work, the pots out of use may be washed, tallies of all sizes made, also flower-stakes of all sizes, matting ties to be bunched in convenient lengths, and the plants that are not likely to require shifting to be surfaced with fresh compost. Camellias will now be swelling their buds, do not neglect to supply them with water, and attention should be given so that it is supplied in proportion to the activity of the growth of the plants. This remark applies equally to other plants.

PITS AND FRAMES.

Carnations and Picotees to receive an abundance of air to ward off the attacks of mildew, which is most virulent in a confined atmosphere. Many of what are called the florists' flowers in these structures are more apt at this season to be injuriously affected by the weather than such as had been planted in good time in the open ground. The general stock to be protected in very severe weather, but above all to be protected from cold cutting winds; on all other and more favourable occasions to be freely exposed to atmospheric influence. Verbenas require to be kept tolerably dry, as they are more susceptible of injury from damp than from cold. If the soil of any plant is sodden with water it should be turned out of the pot, and the drainage examined, and no more to be given until it becomes dry, when sufficient should be given to wet the whole ball of soil.

W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Here, work much the same as last week, with the exception of protecting Broccoli, wheeling manure on spare ground, of which there is little, and among bushes and fruit trees. We make it a rule never to let a barrow go on a walk when it can be avoided; and, if they must be wheeled upon, to do so in frosty, or at least in very dry, weather. We have frequently seen more trouble in cleaning up after a wheelbarrow than would have been involved by a man carrying all that was wanted in several journeys. One secret of keeping places well and economically is never to make work needlessly, or to do work in such a way as to make two jobs out of it instead of one. There is a small heap of prunings by the side of a clean rolled walk, one man will carefully carry them off in a basket, and keep his nailed shoes off the path by walking on the inside alley, and cleaning his shoes before he leaves it; another will slap up a wheelbarrow on the centre of the walk, litter the walk with his careless handling; and, to leave things as he found them, want a broom, perhaps the back of a rake, to level the walk, and then hunt after a roller to make things look as he found them, which he can only thoroughly do by rolling the walk all over; and then ten to one he will think himself very ill-used if his thoughtlessness and carelessness are pointed out to him. Again, one man will water a house of plants at this season, so as not to spill a drop of water, or show that he has thoroughly cleaned the plants as he went along, leaving not a semblance of a weed or a yellow leaf to be seen, because all these are clapped into his apron or other suitable receptacle, so that such plants never do want what some are so fond of giving them—a regular day for cleaning and picking. Another man will dribble and inundate the floor, giving a fruitful source for future dampings and drippings, and will render that floor impassable by every dead leaf and flower being thrown down upon it to let you see he has been doing something—necessitating the sweeping of that floor, and generally either a fresh sanding or a fresh scrubbing, and thus make three or four jobs out of one; and then very likely feel ery much inclined to ride a high-mettled horse, when some old tagers hint that that is not exactly the way either to do work well or to do it expeditiously. "Avoid making two jobs out of ne" would be as important a maxim in these days for gardeners, as "avoid the first quarrel" is a valuable one for newly-married people.

[illegible] a bed of Early Horn Carrots in a frame, and placed [illegible] n-leaved Potatoes i[illegible] little leaf mould in the Mushroom- [illegible]

sidered, after trying many, we prefer this for early crops under protection in the open ground. We prefer it chiefly in the open ground because from a necessity of cropping hard the haulm is so dwarf that we can have the rows closer together; or, if wider, can have succession crops of Cauliflowers and Greens, &c., coming on between them.

FRUIT GARDEN.

Chiefly pruning, and nailing, and tying out of doors; and, in frosty mornings, wheeling burnt earth, charred vegetables, &c., among Strawberry-quarters, earthing up the crowns with this material so as pretty well to cover them, which alike secures them from heavy rains, keen winds, and severe frosts, and then placing a layer of half-rotten dung from old hotbeds as a blunt ridge between the rows, which again will act as a little protection; and if wet weather ensue the virtues will be washed down to the roots. If the weather should prove severe will stick some small branches of Laurel or of Spruce between the rows of the tenderest kinds, as the Queen; but there has been no frost to require such treatment yet. Watered the pots in the Vine-pit, some of which of the Black Prince are coming into bloom, though the average night temperature as yet is little above 50°, but will be gradually raised from 5° to 10° more.

FLOWER DEPARTMENT.

Gave all the air possible in fine, sunny, mild days, by pulling off the sashes from cold-pits and frames to keep the plants small and robust, or from being so thick they would be sure to get drawn and so injure each other if allowed to grow much. In sunny frosty days gave air chiefly by tilting the back, so that the fresh air entering should be mollified by the warm air passing out. In cold dull days with the atmosphere several degrees below the freezing-point, gave no air at all, as, provided the temperature inside ranged from 35° to a few degrees more, there would be little or no growth, no accumulation of vapour to speak of, and the introduction of cold dry air freezing would in such cases do harm. The thermometer in such—nay, in all cases, should be consulted, rather than our own mere feelings. Last season I knew of one case of many hundreds of plants getting done for in a fine, sunny, frosty day. The owner was peculiarly happy that day, felt not a bit of a keen parching air, and, instead of giving a little back air just to prevent accumulation of too much heat about the plants, turned off some sashes and gave air back and front freely to others, and before shutting-up time in the afternoon the poor things were as much done for as if they had been held near a furnace. If the owner had recollected that if extra heat was avoided, the mere light and heat from the sun would never have drawn his plants, he might have avoided the unpleasant disaster. In a sunny frosty day we should give all such things less air, than in a close muggy day with the temperature about 40°, or even above it. In such cases too much air cannot be given back and front, provided damp and fog are excluded. When a higher temperature is required, as for forcing flowers, or stove or warm greenhouse, more care still will be required in air-giving, though the same principles will fully apply. The greater the difference between the outside and inside temperature, the less air should be given, provided enough is secured to give a change of atmosphere; and, here, again, less air will be needed in bright frosty weather than in warm dull weather. The sun will pretty well purify the air for itself, and instead of such cold draughts of dry air being freely admitted, it would be preferable to let the fire heat be greatly reduced. All forced plants, bulbs, &c., should be raised out of a hotbed and hardened off gradually before being taken to a colder place to flower in. Commenced training old and young Pelargoniums, the largest to bloom first, to have no more stopping or potting. The second lot to have any extra strong shoot stopped, that all may have equal strength, and very likely to be repotted. Younger ones for late summer and autumn will be stopped and potted as needed. Turned out and repotted Gloxinias to come in early. Large tubers had all the soil shaken from them and were placed in smaller pots, in sandy loam and peat and a little old dried cowdung, to be repotted again as soon as each pot is full of roots. For fine flowers tubers as large as one's fist are not to be desired, they throw too many stems, and even when thinned do not generally bloom so regularly or finely as smaller ones. A tuber from the size of a walnut and upwards is generally to be preferred. Placed some tubers of Achimenes also in boxes, to be potted when fairly up and several inches in height. This plan enables the grower to arrange the plants better as to size and strength. Continued potting as opportunity offered, using

heated soil and a warm shed for tender plants. Proceeded digging flower-beds and shrubberies in these slight frosty days, as it saves all chance of hurting the grass-edgings, &c.—R. F.

TRADE LISTS RECEIVED.

Sutton's Spring Catalogue and Amateur's Guide for 1862.—This continues to preserve the same features as it possessed in former years—with this difference, that it now includes many novelties which are not to be found in the previous editions.

General Price Current of Kitchen Garden, Flower, and Farm Seeds of the Plymouth Seed Company.—From being a bulky pamphlet, and assuming somewhat of the features of a regular gardening book, this has now lapsed into a less pretentious form, and has the appearance of a respectable seedsman's catalogue, furnishing all the information that is requisite in a priced list.

Catalogue et Prix-Courant de Baltet Frères à Troyes (*Aube*), s a general catalogue of nursery stock, but principally of fruit rees and Roses.

Catalogue descriptif et raisonné des Arbres, Fruitiers et l'Ornement d'André Leroy, à Angers (*Maine et Loire*).—This is very full and very excellent catalogue.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

Ve also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

Ve cannot reply privately to any communication unless under very special circumstances.

LIME AND VEGETABLE MOULD (*E. F.*).—You puzzle us when you say that ou have put 150 bushels of lime to your compost, and that the whole is not nore than three or four waggon-loads. The lime must be in great excess. ; will certainly need no bone dust. You do not tell us the nature of your oil, so we must conclude that your "grass land" is a loam, and the grass be mown. We should apply fifty bushels of the mixture to an acre early the spring.

AMERICAN BLIGHT (*A Novice*).—The Aphis lanigera has by this time etired for the most part down to the roots, and will not return to the stem ntil the spring. You had better scrub the bark with a hard scrubbing-rush moistened with spirit of turpentine, and repeat the application if any f the vermin re-appear in the spring. Remove the earth from about the oots and apply some guano now.

VINERY (*H. S.*)—We see nothing wrong in your plan. The flags had etter slope a little, and communicate with a drain. The border we would ot raise quite so high, but would have it highest inside. Unless you raised igher the wall bounding the flue you would have a difficulty in watering it it is. The idea of supporting your sill on piers is much the same as you ould see in a late Number is adopted by Mr. Niven at Drumcondra. Your aving the border inside as well as outside you will see is the same as that lopted at Lough Crew by Mr. Milroy, only you have not got or shown his rain. The flue alone, if made strong enough, would be sufficient to heat ich a house unless you forced very early; and even then we do not see how e flue should not be sufficient. We have no objections, however, to add e boiler if you think fit. You seem in the cellar to have depth enough to ive a good draught or a good circulation in either case. We do not notice ny mode of ventilation in front, and that will be necessary whether you rce early or late. Even for top ventilation the openings at the ends over e doorway will not be sufficient. You ought at least to have two openings the apex of the roof besides. This would be more necessary if you forced arly, as the stream of cold air from the ends might be too violent; and in ry hot days the house would be apt to be too hot at the centre, and give u red spider in plenty on your Vines. We can hardly enter more on the bject without knowing your specific wants and wishes. The mode of anaging such houses so as to secure a combination of results has been quently given.

VINES TURNED OUTSIDE (*E. V.*).—Having taken your Vines outside your eenhouse a month since, and bound haybands round them, it is of no nsequence now whether you take your Vines into the house at present or ow them to remain bound up until the month of March—they will be ite secure so protected. We have repeatedly stated that for Vines in a eenhouse, there is no more necessity for taking their branches and [illegible] tside in winter than there is for a man to leave his bed and stand out. a owstorm with plenty of dreadnoughts around him to prevent the cold m injuring him much. There is no danger of starting the Vines prematurely, if you do not give your house a higher average heat at night than . If you were making a forcing-house of your greenhouse in winter, and hed your Vines to be late, the taking of them out would be all right; erwise they are safer inside, and much bother and trouble are saved. In a cool temperature inside (40° to 45°), they will suffer no harm. Taking them out too early often injures the crop of the following year.

PLANTS FOR BALCONY AND WINDOW (*Chelsea*).—We should say that three parts of your exposed sandy clay, three parts of your exhausted sandy soil, and one part of your rotten horsedung mixed well together, would grow all the plants you name, except Rhododendrons. For them we would prefer the sandy clay alone well rammed round the balls, and then a coating of an inch of the rotten horsedung, and. better still, cowdung on the surface. These may be potted in any open weather before April, and will be all safe if the pots are plunged and protected by litter. If the weather should be very severe before Apri. a few branches may be stuck among the plants in the way of protection. We should have preferred sweet sandy loam for all with top-dressings, if it could have been had; though, for anything you say to the contrary, your compost may do admirably. All the common Vegetable Marrows will suit your purpose best, as you will have more weight of suitable matter from them than from larger monster kinds. The more you use of them, however, the more you will spoil the marmalade, as we fear is too often done. We hope the marmalade is for your own use.

NAME OF APPLE (*Frank*).—There is no Apple of the name you mention, nor of a name anything like it.

SEEDLING CINERARIA (*Mrs. Tomlinson*).—The colour is pleasing, but in form and substance about twelve years behindhand.

PRUNING YOUNG APPLE TREES (*G. H. L.*).—If the shoots of your young Apple trees are all well placed, allow them to remain and shorten them one-third.

GERANIUM (*M.*).—We do not recollect the Geranium in question. Can you refer us to the Number or page where it is mentioned?

LILAC AS COPPICE WOOD (*Rev. F. Baker*).—A very good suggestion and a coppice of Lilac would be just as easily planted, and quite as cheap, as with Ash, Hazel, or any of the common coppice plants; it will grow on any soil, and is hardy enough for any situation from London to Vienna. London says there are hedges of it by the road-sides in the neighbourhood of Ulm, and Augsburgh, in the elevated, and, consequently, cold region of Bavaria.

NAMES OF PLANTS (*A Subscriber, Stourbridge*).—1, Asplenium marinum; 2, Doodia (or Woodwardia) caudata; 3, Asplenium trichomanes; 4, Blechnum spicant. (*M. H. J.*).—1, Cyrtomium falcatum; 2, Polystichum capense; 3, Campyloneurum angustifolium var. tæniosum; 4. Parietaria serpyllifolia. (*An Immortelle*).—Acroclinium roseum. (*E. H. V. M.*).—Melianthus major. (*J. Hope*).—Polypodium vulgare, and two forms of Polystichum aculeatum var lobatum. The specimens were not numbered. (*J. D., Forfarshire*).—1, Cerastium vulgatum; 2, Clinopodium vulgare. (*B. J. H.*).—Scolopendrium vulgare var. multifidum.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

EGG-PRODUCING AND PROFITABLE FOWLS.

I HAVE kept fowls for about thirty years. Game fowls were my first start. I stuck to them for many years. White Dorkings next, then Grey Dorkings; then Buff Cochins, Black Cochins, and White Cochins; then White-crested Black Polands, and last, Silver-pencilled Hamburghs. About nine years ago I began cross-breeding; and the most profitable fowls I ever had was a cross between the Silver-pencilled Hamburgh cock and White Dorking hen. They follow the Dorking in appearance—most of them five claws, white and blue legs, white and piles in colour, with sometimes one side of a feather in the tail or wing of a greyish-black. They have a ready sale in the market with the feathers on; or dressed, they are a nice sized plump fowl for a gentleman's table, and dress beautiful and white. They lay a tidy-sized egg, half as large again as that of the Hamburgh, and the same size at both ends. They never attempt to sit; and I never heard but one cluck, and that for about a week, but she went on laying the same, only stopped a little longer on the nest when laying—and they will lay from nine to ten months without intermission, though the weather be bad. If they are hatched in the last week in April they will begin to lay in October and keep on till June, and some of them till July; and then when done moulting, they will begin to lay again in December or before, and lay as long as they did the first year and as well: so that by managing to have them of two or three different ages there is no need to be without eggs every day in the year. They are very great caterers for themselves. They leave nothing unturned that they are likely to find the smallest mite in: consequently they do not require and do not eat nearly so much as many others of the sorts I have mentioned. So, taking them in every way, they are the most profitable fowls I ever had or ever saw amongst any of my neighbours who have kept many more different sorts than I have; but I have always eggs when they have none. I have no doubt they would do well a third season, but I keep them but two. So if I was going to begin keeping poultry I should at once get some good maiden White Dorking pullets and a good square Silver-pencilled Hamburgh cock and breed a stock from them, keep all the young cocks cleared off before they begin to interfere with the hens, so as not to have them crossed any further than that one cross.

I have crossed many other sorts, and given them all a two-years trial, and have one sort now undergoing a third year's trial—and that is a cross between the Silver-pencilled Hamburgh cock and White-crested Black Poland hen. Now, for laying there is nothing to equal them, let alone surpass, either in confinement or at large, and the egg is a great improvement on the Hamburghs'; so I advise a White-crested Black Poland hen or two to breed from as layers turned down with the above-named. And if laying was the only quality I wanted, I should make that breed the main stock, and have more Polands and less Dorkings. This cross, being non-sitters on either side, lay full ten months, and have the good quality of moulting all as it were by magic. They fall off in laying the last fortnight; and when they have laid their last egg, in a day or two you will see two or three feathers turned wrong side up, and next day perhaps hardly any feathers on them, the tails dropping all at once. In one night I have seen it and all the feathers come on all together. They are soon in full plumage and all right, and begin to lay again directly.

Then there must be a Silver-pencilled Hamburgh hen to breed some cocks from to be reared up with the pullets, as the cross-bred cocks, as above stated, must be done away: neither must the cross-bred hens be bred from, and no other sort of cock introduced. By that means there will always be the true Silver-pencilled Hamburgh breed, and the other crosses true to what they are intended to be; and with a good walk and proper feeding they beat everything in the poultry way that has come under my notice.—WORCESTER.

IMPERFECT DESCRIPTION OF POULTRY IN CATALOGUES AND PRIZE LISTS.

BEING a Game Bantam fancier, I find very much inconvenience in not being able to discover, not only in your list of prizes but also the catalogues, what the variety of the winning birds in "any other variety" and "Game Bantams cocks" are. In furtherance of this object, seeing that the utility and popularity of these shows have made them so frequent, it behoves a publication like THE JOURNAL OF HORTICULTURE to inaugurate a system of abbreviation so complete and intelligible as to meet with universal approval. Confining myself to Game Bantams, I would suggest for

Game Bantams	G. B.
Black-breasted Red Game Bantams	Bk. B. R. G. B.
Duckwing Game Bantams	Dk. W. G. B.
Piles	Pls.
Blood-red Piles	Bld. R. Pls.
Any other variety	A. O. V.
Cocks	Cks.
Pullets	Plts.
Cockerels	Ckls.
Hens	Hns.
1st prize	1.
2nd „	2.
3rd „	3.
Highly Commended	H. C.
Commended	C.

Many of these abbreviations are already in use with amateurs who mark their catalogues whilst at the shows, proving the call there is for such an adoption. If such a system was started by your valuable Journal, there can be no doubt but that the Societies throughout the country would follow your example in printing the catalogues; and when established, the prize lists as published by THE JOURNAL OF HORTICULTURE might be printed in columns—viz., one for number; two for name of exhibitor; three, address; four, variety; five, age; six, prize; and perhaps seven, price—how much more condensed, plain, and full would such a report thus abbreviated and tabulated be.

In conclusion, I beg to submit that Game Bantam varieties have equal right to be mentioned individually as any other variety have; and I am sure the majority of your readers will be obliged if through your advocacy this desideratum is supplied.—WEAR VALLEY.

P.S.—I do not mean to confine abbreviations to Game Bantams, but to all poultry, Pigeons, birds, &c.; and as the merchant writes free on board by F.O.B., why not Game Bantams by G. B., &c.?

PRICES OF EXHIBITION POULTRY.

A CORRESPONDENT of well-known credibility informs us that the Marchioness of Winchester recently sold a Dorking cock and two hens for £41 before [illegible] in the Exhibition at Birmingham; and that in 1860 a gentleman offered her at the Show £200 for the three which won the cup at Birmingham. Her ladyship now has a Dorking cock for which she has been offered £23, but refuses to take less than £25.

SUTTON AND MACCLESFIELD POULTRY EXHIBITION.

THIS Show was held at the house of Mr. James Rowson Sheldon, "Old King's Head," Sutton, Macclesfield, on the 3rd and 4th inst. It was somewhat limited; but we hope next year it will be more extended.

Black *Hamburghs* were very superior. The same class at Birmingham, Manchester, and Liverpool, cannot be compared to the few pens here exhibited—indeed they were pronounced by the Judge to be perfection. There are more of this breed kept in this neighbourhood than any other place we ever saw. They are first-rate layers, and also good birds for the table. Silver-spangled were very good, as also were Golden-pencilled. A pen of Silver-spangled was claimed for £3 3s., and one pen of Duckwing Bantams for the same amount.

Ducks were poor in consequence of the prize being small. There were only five entries.

Of *Pigeons*, the Carriers, Almonds, and Barbs were very good. We are in a position to state that about twenty entries of Pigeons were returned, there being no room to accommodate them.

SPANISH (Black).—First, E. Browne, Sheffield. Second, E. Smith, Middleton.

DORKINGS (any variety).—Prize, E. Smith, Middleton.

COCHIN-CHINAS (any variety).—First, W. Wood, Sheffield. Second, E. Smith, Middleton.

GAME (any variety).—First, S. Brown, Macclesfield. Second, W. Forster Butley.

HAMBURGHS (Silver-pencilled).—First, M. Dawson, Middleton. Second W. Wood, Sheffield.

HAMBURGHS (Golden-pencilled).—First, J. Smith, Sutton. Second, J. Dawson, Middleton.

HAMBURGHS (Golden-spangled).—First, N. Marlow, Denton. Second, W. Kitchen, Macclesfield.

HAMBURGHS (Silver-spangled).—First, E. Smith, Middleton. Second, N. Marlow, Denton.

HAMBURGHS (Black).—First, J. Thomas, Macclesfield. Second, W. Kitchen, Macclesfield. Highly Commended, S. Brown, Macclesfield.

GAME COCK (any variety).—Prize, R. Stanhope, Adlington.

DORKING COCK (any variety).—Prize, J. Hall, The Fence.

BANTAMS (any variety).—First, W. Silvester, Sheffield. Second, N. Marlow, Denton.

DUCKS (Aylesbury).—First, J. Hall, The Fence. Second, W. Forster, Butley.

DUCKS (any distinct breed).—Prize, T. Smith, Langley.

PIGEONS.—*Carriers.*—First and Second, A. L. Silvester, Birmingham. Highly Commended, S. Orme, Sutton. *Owls.*—First, F. Key, Beverley. Second, J. Fielding, Rochdale. *Almond Tumblers.*—First, A. L. Silvester, Second, S. Orme, Sutton. Highly Commended, A. L. Silvester. *Powters.*—Prize, E. Browne Sheffield. *Jacobins.*—First, H. Yeardley. Birmingham. Second, N. Hudson, Sutton. *Nuns.*—First, J. B. Edge, Birmingham. Second, H. Yeardley. Birmingham. *Fantails.*—First, T. Ellrington, Beverley. Second, J. B. Edge. Highly Commended, H. Yeardley. *Tumblers* (any variety).—First, S. Orme. Second, H. Yeardley. *Barbs.*—First, S. Orme. Second, G. Goore, Liverpool. *Turbits.*—First, W. Whitson, Langley. Second G. Greaves, Sutton. *Tiplers.*—First, J. B. Edge. Second, E. A. Hargrove, Birmingham.

JUDGES AT THE BIRMINGHAM POULTRY SHOW.

FINDING by statements conveyed to me, both orally and by many letters, a mis-statement is now being purposely circulated respecting my not officiating at the last Birmingham Poultry Show, permit me simply to state that the particular appointment, as then proffered me, I could not with honour and straightforwardness accept; and, consequently, it was by myself altogether declined.

From that cause only my customary services as hitherto, in accordance with my own wishes, gratuitously rendered from the institution of the very first Birmingham Exhibition to the present year, were stated to be no longer required.—EDWARD HEWITT, *Sparkbrook*, *Birmingham*.

PRIZES FOR RABBITS.

ENTIRELY do we coincide with "QUIS" whose communication we published in our last Number. The prizes for Rabbits should be so offered and awarded as to encourage, primarily, the improvement of the breeds that are most useful and commercially valuable.

We have nothing to say against prizes being offered for superior length of ears, or beauty of markings, for such prizes encourage the cultivation of a taste for a home-amusement; and, besides, you cannot promote the breeding of any kind of Rabbit without in some degree promoting the breeding of all other kinds. Poultry exhibitions have had this general influence over all varieties of fowls, though at first the prizes were directed only to a few.

We would give the largest, and the most numerous prizes, to most-meat-producing Rabbits, and to the Rabbits the fur of which is most valuable. If these two good qualities could be united in one variety, then that variety should have the highest of the awards.

It is probable that many of our readers are not aware of the value of these too-much-neglected animals.

We know of one warren at Brandon, in Suffolk, whence we have been told twenty thousand Rabbits are sent annually to London. Hundreds of thousands are imported every year from Ostend and other places along the coasts of Holland and France. No less than one million and three hundred thousand are sold yearly in Leadenhall and Newgate Markets; and if to these are added the numbers sent direct to the retailers, and those consumed in country districts, we shall not be far wrong in naming three millions as the probable number of Rabbits eaten in England annually.

Then as to the value of the skins of some of the varieties, there was a time, half a century ago, when a single skin of a Silver Grey Rabbit, Silver Sprig it was then called, was worth 3*s.*: these skins sell now for 30*s.* per dozen. They are chiefly exported to China, and a friend informs us that a very short time since he saw one heap, valued at £4000, about to be shipped to that country. The skins of Angoras, Chinchillas, and some others are equally valuable. The fur of even the commonest of Rabbits is valuable in a less degree for the manufacture of what are called beaver hats.

SOUTH OF IRELAND POULTRY, PIGEON, AND CAGE BIRD ASSOCIATION.

This, the second Show, was held on the 2nd and 3rd inst. in the Athenæum, Cork, and was decidedly superior to last year's both as to the number and quality of the specimens exhibited.

The classes of *Spanish* and *Crested Fowls* were considered by Mr. Tegetmeier to be extremely good, and the *Dorkings* in particular very superior—quite above the average attained by the class at English shows. In this class a Silver Medal, given by Mrs. Ussher, of Camphire, co. Waterford, for the best pen of Silver Greys, was carried off by J. C. Perry, Esq., from thirteen competitors.

In *Pigeons*, also, there was a manifest advance on last year. There were several pens of excellent Carriers, Powters and Almond and other Short-faced Tumblers. The Fantails were numerous, and, as a class, quite above the average seen at exhibitions.

Spanish.—First, R. P. Williams, Clontarf, Dublin. Second, F. Hodder, Templelawn, Cork. Highly Commended, J. C. Perry, Cork; R. W. Boyle, Dublin. Commended, A. E. Ussher, Cappoquin. *Chickens.*—First, Mrs. Dring, Glanmire. Second, R. W. Boyle. Commended, F. Hodder.

Dorkings.—First, F. Hodder, Cork. Second, R. W. Boyle, Dublin. Highly Commended, R. P. Williams, Dublin. Commended, J. C. Perry, Cork; Hon. Mrs. H. B. Bernard, Bandon. *Chickens.*—First, J. C. Perry, Cork. Second, A. E. Ussher, Cappoquin. Commended, F. E. Curry; T. O'Grady, Bandon; A. E. Ussher; R. W. Boyle; R. P. Williams.

Game.—First, J. C. Perry, Cork, Second, J. Green, Cork. *Chickens.*—First and Second, T. Mayo, Upper Convamore, Mallow. Commended, J. C. Perry, Browningstown.

Polands (Black, White Crests).—Prize, Miss E. de Courcy Drevar, Blackrock, Dublin. Highly Commended, Miss E. de Courcy Drevar. Commended, Miss E. de Courcy Drevar.

Polands (Gold).—Prize, R. P. Williams, Hollybrook, Clontarf, Dublin. Commended, S. Wakefield, Barrackton, Cork.

Polands (Silver).—Prize, R. W. Boyle, 35, College Green, Dublin. Highly Commended, R. P. Williams, Hollybrook, Clontarf, Dublin. Commended, S. Wakefield, Barrackton, Cork; W. B. Weatherman, Richmond, Blackrock, Cork.

Hamburgh (Gold, Rose-combed).—Prize, Mrs. Dring, Rockgrove, Glanmire.

Hamburgh (Silver).—Prize, R. P. Williams, Hollybrook, Clontarf, Dublin. Commended, F. Hodder, Templelawn, Ballintemple, Cork.

Cochin-Chinas (Buff or Yellow).—Prize, R. W. Boyle, 36, College Green, Dublin. Commended, J. Brassington, Sunday's Well, Cork.

Cochin-Chinas (Partridge).—Prize, J. C. Perry, Browingstown, Cork.

Cochin-Chinas (White).—Prize, F. Hodder, Templelawn, Ballintemple, Cork. Commended, J. C. Perry, Browingstone, Cork,

Brahma Pootra.—Prize, W. B. Weatherman, Richmond, Blackrock, Cork. Highly Commended, Hon. Mrs. H. B. Bernard, Coolmaine, Bandon.

Bantams (Sebright).—Prize, W. Corbett, Castleconnell, Limerick.

Bantams (Featherlegged).—Prize, J. Donegan, Montenotte, Cork.

Bantams (Smooth Legs).—Prize, J. Wigmore, Langford Place, Cork. Highly Commended, A. E. Ussher, Camphire, Cappoquin. Commended, F. Hodder, Ballintemple, Cork (Japanese Silkies).

Turkeys.—Prize, J. Bruce, Milltown Castle, Charleville (Norfolk). Commended, Hon. Mrs. H. B. Bernard, Coolmaine, Bandon (Norfolk). *Poults.*—Prize, J. C. Perry, Browningstown, Cork.

Geese.—Prize, R. P. Williams, Hollybrook, Dublin. Commended, R. W. Boyle, College Green, Dublin; T. O'Grady, Roughgrove, Bandon. *Goslings.*—Prize, A. E. Ussher, Camphire, Cappoquin. Commended, J. Brassington, Sunday's Well, Cork (Hong Kong); A. E. Ussher, Camphire, Cappoquin (Toulouse).

Ducks (Aylesbury).—First, J. W. Dyas, Ballintemple, Cork. Second, P. Hefferman, Lismore.

Ducks (Rouen).—First, R. P. Williams, Hollybrook, Dublin. Second, W. B. Weatherman, Richmond, Blackrock, Cork. Commended, V, Tomkins, Sunday's Well, Cork; P. Heffernan, Lismore.

PIGEONS.

Carriers (Black).—First, T. Hare, Bishop Street, Cork. Second, Dr. Harvey, St. Patrick's Place, Cork. Highly Commended, Dr. Harvey; T. Hare. Commended, Dr. Harvey; T. Davis, Castle Street, Cork.

Carriers (Dun).—First, Dr. Harvey, St. Patrick's Place, Cork. Second, J. Perrott, Hayfield, Cork. Highly Commended, Rev. J. O'Sullivan, Blackrock, Cork. Commended, T. Davis, Castle Street, Cork.

Carriers (Blue or other colour, except Black and Dun).—First, N. Daly, North Mall, Cork. Second, Dr. Harvey, St. Patrick's Place, Cork.

Powters (Black-pied).—First and Second, rvey, St. Patrick's Place Cork. Highly Commended, J. Perrott, Hayfield, Cork; W. B. Weatherman, Richmond, Blackrock, Cork.

Powters (Blue-pied).—First and Second, Dr. Harvey, St. Patrick's Place, Cork. Highly Commended, W. R. Baldwin, Roseville, Lismore. Commended, W. Parker, Landscape, Cork; W. B. Weatherman, Richmond, Blackrock, Cork; Rev. J. O'Sullivan, Blackrock, Cork.

Powters (Red-pied).—First and Second, Dr. Harvey, St. Patrick's Place, Cork. Commended, J. Perrott, Hayfield, Cork.

Powters (White).—First, Dr. Harvey, St. Patrick's Place, Cork. Second, A. E. Ussher, Camphire, Cappoquin.

Powters (any other colour than Black, Blue, Red, or White).—First, J. Perrott, Hayfield, Cork (Splash). Second, Dr. Harvey, St. Patrick's Place, Cork.

Tumblers (Almond).—First and Second, Dr. Harvey, St. Patrick's Place, Cork. Commended, J. Lloyd, Warren's Place, Cork.

Kites.—First and Second, Dr. Harvey, St. Patrick's Place, Cork.

Baldheads or Beards.—First, Dr. Harvey, St. Patrick's Place, Cork (Blue Balds). Second, J. Perrott, Hayfield, Cork (Beards). Highly Commended, Dr. Havrey; T. Davies, Castle Street, Cork.

Mottles (Short-faced or other colours).—First, T. Hare, Bishop Street, Cork. Second, Dr. Harvey, St. Patrick's Place, Cork (Black Mottles). Highly Commended, T. Hare (Black).

Tumblers (Red or Yellow).—Prize, A. E. Ussher, Camphire, Cappoquin.

Tumblers (any other colour).—Prize, N. Daly, North Mall, Cork. Highly Commended, Dr. Shinkwin, Cork (Rosewing). Commended, W. B. Weatherman, Richmond, Blackrock, Cork.

Fantails (White).—First, R. Nash, Lakelodge, Glanmire, Cork. Second, T. O'Grady, Roughgrove, Bandon. Commended, W. Bible, Cork; J. Perrott, Hayfield, Cork; J. Pike, Besborough, Cork.

Fantails (Black or other colour).—First, A. E. Ussher, Camphire, Cappoquin. Second, N. Daly, North Mall, Cork.

Jacobins (Yellow or Red).—First, V. Tomkins, Sanday's Well, Cork. Second, W. B. Weatherman, Cork.

Jacobins (any other colour).—First, F. Hodder, Templelawn, Cork (Mottle). Second, T. Babington, jun., Monkstown, Cork (White).

Barbs (any colour).—Prize, J. Perrott, Hayfield, Cork (Red). Highly Commended, T. Hare, Bishop Street, Cork.

Owls (any colour).—Prize, N. Daly, North Mall, Cork (Blue). Commended, J. Perrott, Hayfield, Cork (Yellow).

Turbits.—Prize, N. Daly, North Mall, Cork. Commended, T. O'Grady, Roughgrove, Bandon.

Trumpeters.—Prize, T. O'Grady, Roughgrove, Bandon. Commended, J. Perrott, Hayfield, Cork.

Nuns.—Prize, T. O'Grady, Roughgrove, Bandon.

Magpies.—Prize, P. Goulding, College Road, Cork (Black).

SONG BIRDS.

Yellow Canaries.—Prize, W. Corbett, Castleconnell, Limerick. *Green Canaries.*—Prize, W. Corbett, Castleconnell, Limerick. *Mealy Canaries.*—Prize, W. Corbett, Castleconnell, Limerick. *Goldfinch Mules.*—Prize, J. Corcoran, Cork. Commended, F. Hodder, Templelawn, Ballintemple, Cork. *Linnet Mules.*—Prize, Rev. J. O'Sullivan, Blackrock Cork. *Thrushes.*—Prize, W. Waters, Monkstown. Highly Commended, J. Lloyd, Warren's Place, Cork. *Nightingales.*—Prize, Rev. J. O'Sullivan, Cork. *Skylarks.*—Prize, R. Daly, Wellington Square, Cork. *Bulfinches.*—Prize, F. Hodder, Templelawn, Ballintemple, Cork. (Speaks one sentence and several words). *Goldfinches.*—Prize, R. Creech, Greenmount. Commended, P. Mahony, Tuckey Street, Cork. *Linnets.*—Commended, B. A. Hyde, Cork.

Judges.—Of *Poultry*, J. Blandford, Esq., Ducloyne, Cork; and W. B. Tegetmeier, Esq., Muswell Hill, London. Of *Pigeons*, John Austin, Esq., Panorama Terrace, Cork; and W. B. Tegetmeier, Esq. Of *Cage Birds*, W. T. Jones, Esq., M.D. Cork; and Adam Parker, Esq., Landscape, Cork.

PERTH POULTRY SHOW.

Mr. Anderson used to style himself the Wizard of the North. He may have been so far as legerdemain was concerned; but the real northern wizard was Sir Walter Scott. We have passed the age of romance, and have long since dealt more with the realities than fictions of life—novels among the number; but Scott was not, properly speaking a novelist, he gave history with a sauce piquante or poivrade; and when other authors of imaginative works are either uncared for because the time or taste for them has past away, or forbidden because their tendencies are doubtful, Scott's works will be allowed in every library, and read by all readers: thus, the nearer we got to Perth the more we were engrossed with the recollections of the "Fair Maid" of that ilk; and many names and places were familiar. Thanks, then, to Sir Walter, we were at home in a strange place. Strange no longer, for it has inaugurated a regular poultry show.

We have hope we shall some day have a good supply of poultry from Scotland. We already receive a goodly quantity, but it is deficient in quality. From inquiry we made on the spot we find it returning a remunerating price; if it do so when wofully deficient in merit, what would it do if the quality were nearly perfect? We do not believe it would involve any greater outlay than at present, no more food would be consumed. Now, in order to insure size the fowls must be kept till they are full grown: this not only involves consumption for a long period, but it also implies an age at which a fowl is adult or nearly so, and, consequently, hard. This necessity arises from the want of size in the breed; one of a larger race would be large enough to kill, and much larger than the birds now brought to market when only half as old as they are. Now, if poultry be worth attending to at all, see the gain there is in the substitution of a good for an inferior breed; there is an economy of the food that would be eaten during two months or more, and the return for that which was eaten would be at least double in *weight of food*. The qualities would not bear comparison; there would also be a much readier sale for the improved quality.

All this has been felt by the nobility and gentry in those parts, and they have wisely determined to use their influence in favour of any improvement.

The plainest and probably the most effectual method was to set on foot and to support a good poultry show: hence that we have to record and to remark upon. The prize list was a very liberal one, and brought over some of the English exhibitors; we trust only an instalment of those we may expect another year when the Show is better known.

The first class was for Silver Grey *Dorkings*. This was, as it has been everywhere, a failure. Ten pens were entered, and as this colour is peculiarly admired and insisted upon in Scotland, we looked for perfection, but we found nothing of the kind. There were not three perfect pens in the class; there were only two cocks without white in their tails, and few with perfectly black breasts. Many of the pens here disqualified would have stood well in the open competition. We should like to see these classes abolished at all shows, and the amount of the prizes offered for them added to that which follows, and where all colours are admissible. There were very fine birds shown, and although the prizes went to England, Perthshire and the surrounding country were well represented. The Ladies Louisa Thynne and Julia Cornwallis, and Mr. Berwick are frequent winners at the English shows. Lords Kinnard and Wemyss showed very excellent birds; the latter, more fortunate than the former, gained two prizes. Lord Bining showed good Dorkings. There were also two other classes—one for Silver Grey, the other for Dark Grey hens. Both filled well. They were remarkable for the number of the nobility who were competitors, and the quality of the birds shown.

The *Spanish* fowls were very good, and the principal prizes remained in the north. It is worthy of note that in this breed, where good qualities increase with age, the chickens have of late been better than the adults. Eleven pens were here deemed worthy of notice.

The Black-breasted and other Red *Game* showed well. The first prize went to Halifax, the other remained at home. It would seem to be necessary to tell our Scotch friends that in dubbing cocks, the whole of the comb should be removed close to the head. Many of the birds shown in this class had so much left, we could but think it [illegible] ng were good, but not [illegible]

[illegible] *Cochin Chinas* [illegible]

to Messrs. Berwick and Watkin. Some of the pens shown would, nevertheless, seem to make it necessary to remind exhibitors that size is not the only requisite of this breed. The Whites were hardly of average merit.

We cannot speak too highly of the *Brahma Pootras;* they were in every respect excellent—in size, colour, and all the requisites of the breed.

In the Silver-pencilled *Hamburghs* the white deaf ear was entirely wanting: hence the first prize was withheld. The Silver-spangled were very meritorious, and Lady Julia Cornwallis took first prize. The Golden-pencilled and Spangled left nothing to desire; Mr. Entwistle's birds in the former class were of high merit.

There was a prize offered for old *Scotch Grey*, and a pen was shown of good useful fowls. We could not discover any marks of purity about them.

Polands were very weak, and two out of three prizes were withheld.

In the "variety" class, there was a pen of curious fowls. Both in cock and pullets, from the nostrils to the front of the skull, there was no comb, but a red skin. Where it reached the front it divided, and two very good spikes, perfectly round, stood up, rather inclining to the front.

All the *Bantams* were very good. Mr. Anderson and Lord Bining's Sebrights and Mr. Shorthose's Game deserve mention.

A peculiarity here was a good class of Norfolk *Turkeys*, the prizes were scattered about, and the successful pens weighed 57 lbs., 52 lbs., and 49 lbs. The class for Grey or Cambridge Turkeys did not fill.

White *Geese* showed well, and weighed 59 lbs., 54 lbs., and 45 lbs. The Greys did not distance them as they mostly do in weight, they weighed 59½ lbs., 58½ lbs., and 47 lbs.

There was a very good class of Aylesbury *Ducks*, and they weighed well, bringing 22 lbs., 20 lbs., and 18 lbs. Rouen Ducks have increased everywhere in weight, and Perth was no exception; as their colours were perfect it was necessary to weigh them. They surpassed the Aylesburys, weighing 22 lbs., 20 lbs., and 19 lbs.

Next came the classes for *Single Cocks*. Three Silver Cups, value five guineas each, were offered for the best Dorking, Spanish, and Game cocks; it was a very hard contest in each class. Lady L. Thynne won that offered for the Dorking; but even her celebrated bird was hard run by Lord Bining, Lady Julia Cornwallis, and the Rev. J. G. A. Baker. Master Redpath, of Edinburgh, won the Spanish, but had great difficulty in defeating Mrs. White, who showed three birds of unusual merit. Mr. Adams, of Beverley, won the Game cup, beating fourteen competitors.

The *Pigeon* show was good and very attractive, and 107 *Canaries* shown in good handsome cages were very pleasing.

The Show was held in the City Hall, a building admirably adapted for the purpose, large, lofty, entirely lighted from the roof, and quite free from draught. The poultry filled it with 255 pens, on the top of the poultry stood the Pigeons, and all one end of the room was devoted to Canaries. They filled it. We are happy to say the Show will be annual, and we hope it will be supported by English amateurs.

Mr. Brown was an able, obliging, and indefatigable Secretary.

Mr. Baily, of London, was the Judge.

HOW AM I TO PROTECT MY HIVES?

Having got up a stock of some half a dozen hives of bees, the study and interest I take in which, have afforded me a great deal of amusement and gratification. They are all well domiciled, and have every convenience for supering and observation, and, to my view, complete, save suitable covers for protection. I would, therefore, confidently appeal to the many apiarian readers of your Journal for their fraternal assistance.

I have already ransacked your last three or four volumes without meeting anything to suit my want. Read attentively the pan-and-hackle controversy. I would sooner stick to my temporary thick plies of cuba matting for a covering. than adopt the former bare, unsatisfactory affair. The latter may very possibly possess all the advantages its advocate stated, and still be unsuitable in my case, as I must have them always more readily inspected than the trouble and litter that would inevitably ensue in continually moving off and on the hackle, at the same time quite spoiling their neat surroundings.

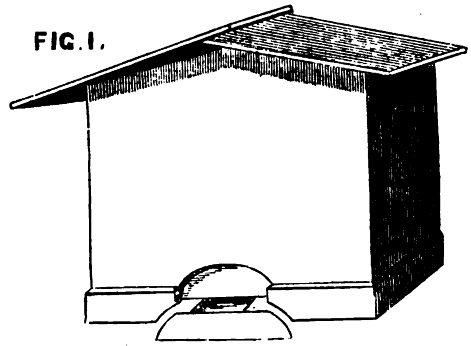
Th[illegible] build a house? some one may say; but my pre-

ıs are all against such, thinking from the results of my own
vation that bees thrive much better placed on single
tals.

boards are principally square, larger by an inch all round
the hives. How would it do to remove the upper half of
nch—say to half the thickness of the board, the under part
left to support an outer moveable case formed of inch
? Would such a case not be too close and hot? Having
arden wall in their rear might the back of such not be
ed? What form of a roof would be most useful and
ful, and how would I take away from the stiff, plain
rance the front of a square wooden cover would have?—

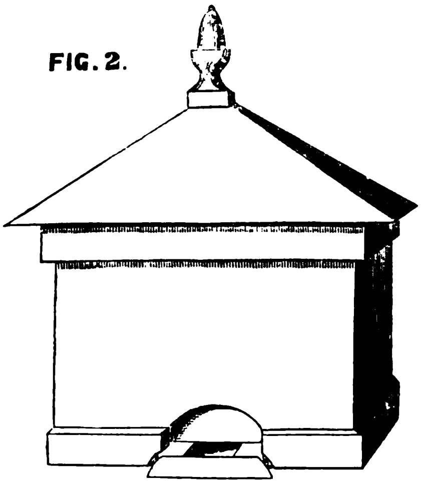
ıe accompanying woodcuts represent the two descriptions
e-covers in actual use in our own apiary.

FIG. 1.



e back and front of *fig.* 1 are formed of half-inch wood
ches high in the centre, nailed to sides of three-quarter-inch
11 inches high. It rests on the floor-board, and is
ıed in its place by a fillet at the bottom of half-inch wood
ıes wide, which fits loosely outside the floor-board. The
consists of two large slates (duchesses) 24 inches by
ches laid on the top, and removeable at pleasure. It
sses the merits of cheapness and efficiency.

FIG. 2.



. 2 is made of half-inch wood 11 inches wide, dovetailed
ıer, and fastened by means of glue and a brad driven
gh each of the tenons. It rests on the floor-board where
etained in the same manner as *fig.* 1. The roof is separate,
s formed of half-inch wood 11 inches wide, cross-bradded
her with a central-turned acorn 2¼ inches in diameter. Its
fits loosely over the hive-cover, and rests on angle pieces
corners. A half-inch opening which cannot be seen in
ıgraving is left under the eaves all round for ventilation.
re ornament be required panels may be shown at the front,
and sides, formed of some neat moulding.

r floor-boards (like your own) project an inch all round
ives, and this allows nearly three-quarters of an inch space
en the latter and the outer cases. If desired, this space
be filled with some nonconducting substance. An experienced apiarian friend always dries the fine and short grass cut from his lawn, and applies it to this purpose, but we have never found it necessary to do so.]

EXAMINING BEES WITHOUT BEING STUNG.

The impunity with which your experienced correspondents appear to meddle with the bees and investigate the interior of the hives, puzzles me exceedingly. I should not suppose my bees are more savage than other people's, but when I have disturbed them by taking out a bar or otherwise, I have only raised a wild storm of little warriors, and although covering myself with net as carefully as I could, generally get stung somewhere. I have also found great difficulty in restoring the bar to its place without crushing some of the bees. A queen I have never seen, but should much like to make myself acquainted with her majesty and subjects "at home," without injury to them or from them. Can you give me any instructions in this matter?—J. H., *Malden.*

[A little smoke from some vegetable substance (fungus, rags, touchwood, or tobacco, will either of them serve the purpose) blown into the hive under the crown-board about half a minute before removing the latter, will generally subdue the pugnacity of which you complain. We can give no better instructions for these manipulations than are to be found in page 167 of the twenty-sixth volume of THE COTTAGE GARDENER. By adopting frame-hives instead of plain bars you may obviate the risk of crushing bees when removing the combs from, or returning them to their places. We understand that "A DEVONSHIRE BEE-KEEPER" has inverted what he calls "a compound bar-frame," by means of which bar-hives and frame-hives may be used promiscuously in the same apiary without forfeiting the advantages arising from the power of interchanging combs in every hive, and hope ere long to be enabled to give a full description of this contrivance.]

HONEY AND CHEMISTRY—INTRODUCING FOOD DIRECTLY INTO THE COMBS.

The passage to which "A. B." refers in page 267 occurs in THE JOURNAL OF HORTICULTURE of the 26th of November, and is as follows:—"I believe that even pure honey will not keep unless placed in the combs by the bees themselves, and I am very sure that all artificial compounds require to undergo a chemical change in the stomach of the bee before they can be stored in the combs in such a state as to keep good throughout the winter."

By this I meant to point out the mechanical difficulty of placing honey in the combs without the occurrence of air-bubbles and impurities, which could, probably, only be avoided by accepting the agencies of the bees themselves. Although I did not then intend to raise the question as to whether honey does or does not undergo a change in the stomach of the bee, I can have no objection to state my opinion that such a change does really occur. On inquiry, I find that this is regarded as an established fact by the scientific world, although I have not been able for the present to ascertain upon what authority it rests.

With regard to the chemical change which all artificial food undergoes in the stomach of the bee, I know not how to adduce more conclusive proofs than have been furnished by my own observation. Not only is the flavour of the compound modified in a very appreciable degree, but the tendency to crystalisation is either altogether all lost, or very greatly diminished. Any one who has been in the habit of administering to bees large quantities of artificial food can scarcely fail of being able to confirm my observations in this respect.

Some dozen years ago, not having then had quite ten years' experience in bee-keeping, I was much taken up with the plan of introducing food directly into the combs, and finding difficulty in perfectly filling all the cells, I set to work and made a small wooden tank 1¼ inch wide by 9 inches deep and 11½ inches long, which just admitted a single comb. I fancied that by placing an empty comb in this receptacle, and then slowly filling it with food it would expel the air from every cell as it rose, and thus save me much trouble in pouring food into the combs. Alas! the first trial dispelled the illusion. After slowly filling it with liquid food until the comb was entirely submerged, I had the mortification of finding that the cells remained completely empty! Nothing daunted by this failure, I returned to my former mode of filling combs, until at length I supplied a weak swarm with such an overpowering quantity that the bees declined to meddle with it, and allowed it to remain where I had placed it. The result was most disastrous. A thick coating of mildew gathered on the exposed surface of the syrup and entirely enveloped the combs so that utter ruin was the consequence. It was the recollection of this deplorable failure which induced me to caution your apiarian readers against over-estimating the advantages of introducing artificial food by pouring it into the combs.—A Devonshire Bee-keeper.

DRIVING BEES.

I can fully indorse all that is stated in page 287, by "B. & W.," in favour of driving. The attainment of this most necessary apiarian accomplishment is often a sad stumbling-block in the path of the young bee-keeper. Any one who will trouble himself to refer to page 52 of the twenty-first volume of The Cottage Gardener, may there find chronicled the difficulties I encountered before I could succeed in driving a hive of bees. At the present time I think but little of it, and seldom find it necessary to don either a bee-dress or gloves for the occasion. Any novice in apiarian matters will find it easy to acquire the same facility if he can get an experienced friend to give him a few lessons in the art.—A Devonshire Bee-keeper.

UNITING BEES IN TWO BAR-HIVES.

Would "B. & W." be kind enough to give his plan of making a union with two bar-hives, as he mentions at page 247? For my own case I have never removed the top-board.—Stewarton Apiarian.

[There must be something quite peculiar in the Stewarton system of bee-box management, if, as I understand from the query of the "Stewarton Apiarian," he and others in the north do not remove the top-board, and yet contrive, when effecting unions of stocks, to get the bees to ascend instead of descending. In my own case I have always given the bees in each hive access to each other by opening a one-inch or two-inch hole in the top of the lower hive, down which they have invariably gone after a greater or less period of time. All bees will in fine weather find their way into the open air sooner or later. As my entrances are all in the lower hives, every bee when going out must descend and pass through the lower hive, where on returning it remains as a rule.

If a "Stewarton Apiarian" has my little work, "The English Bee-keeper,"* to refer to he will find illustrations of the sort of bar-hives and boxes which I have always made use of, as well as a fuller answer to his question than I can give here.—B. & W.]

VENTILATING HIVES DURING THE WINTER

Three winters ago I purchased a hive (wooden box) of bees from an apiarian, who was selling his stock pending his removal to a distant part of the country. On going to see the bees prior to purchasing I found all his boxes, eight in number, thoroughly ventilated, the doorway being left open to its full width, and a four-inch-square opening in each crown-board, only covered by a piece of perforated zinc; the hives were in a small wooden bee-house open to the front. This starvation state of affairs of course elicited from me a few questions as to the cause of such apparent carelessness for his bees, when I was informed that such had been his practice for a number of years. Some years ago he had been in the habit of keeping his bees free from ventilation during the winter; but not unfrequently he had the mortification of losing his bees. As a last resource he seems to have adopted a directly-opposite plan, by ventilating them in a manner above described, and, singularly enough, he never afterwards lost a hive.

Without, then, seeing the reasons for this success, the facts are too plain to admit of doubt: I therefore adopted his plan, and up to the present have been favoured with similar success [illegible] he old [illegible] without opening at the top (and there are a goodly array of them in this neighbourhood), have seen my hives, and their greatest cause of wonder seems to be that the bees are not perished. My experience so far indicates that bees kept in a comparatively dry atmosphere by thorough ventilation will come through the most severe winter in our climate in a better condition than when ventilation is prevented.

I may here say I think it advisable to ventilate early in October, but not continue it longer than the middle of January or the commencement of February, although I have ventilated until the middle of March; and after this the hive so ventilated, without being fed, has sent out its first swarm only second in the neighbourhood, the first being thrown off only a day or two earlier from a stock which had been fed during the whole of the spring.

There is also another point worthy of notice—namely, when ventilated they require a considerably less quantity of food. As an illustration of this—I, and a friend near, at the beginning of last winter had each a hive very similarly situated in most respects, except that mine had only 12 lbs. of honey as their winter stock, while his had upwards of 20 lbs. I ventilated mine in the manner before described; whilst my friend, I suppose out of kind consideration for his favourites, added a bell-glass over the perforated zinc by way of making comb-side a little more congenial. Before our bees were able to provide for themselves a fresh supply, in the following spring my friend's stock was bankrupt, he having to eke out their supply by feeding, while mine paid more than twenty shillings in the pound, and sent out a prime swarm three days earlier than his.

Numerous instances have come under my own observation during the last two winters of hives perishing (in one case seven) through the severity of the frost, while the hives through want of ventilation have been saturated with moisture.

To-day (January 1st), I have been cleaning the foot-boards of my hives, and although they are ventilated to such an extent, I find evident indications that breeding has commenced in one. The hive is not a bar-and-frame one, so that I cannot verify my suspicions by looking for the eggs; but while some bees are hanging ladder-form, others are busily engaged in the cells.

I have been led to make the above remarks in the hope that "A Devonshire Bee-keeper" will oblige us by giving his experience in favour of non-ventilation, which I see he recommends in your Journal of Oct. 8 to your correspondent, "A. W.;" and also because I think there may be many who have lost their bees through not ventilating, who will be glad to hear that the opposite plan has, in several instances extending over a number of years, been proved to be (I think I may say) an improvement on his recommendations.—W. Johnson.

VARIETIES.

Colonial Cabinet Wood.—A novel and beautiful specimen of ornamental wood grown in this colony has recently come under our notice. But a small quantity, it is understood, has yet been wrought, indeed the first specimen was only recently exhibited in cabinet articles by Mr. Charles Hunt, of Jamison Street. At his establishment a cheval table has been manufactured from this handsome and strongly-marked wood, which cannot fail to attract attention in the midst of other varieties of colonial and European cabinet timber. There is a decided contrast in the colours. The heart-wood is a pale yellow, unmarked; and the sapwood a dark sienna, with a fine serpentine grain at intervals (not very frequent), broken by knots. It is said to be an excellent material for cabinet articles, as it is fine in grain, crisp, yet firm, when cut in veneers, and taking a fine polish. The strongly-marked features of this wood distinguish it clearly from Walnut, its characteristics being much bolder; but its quality would fit it for many of the ornamental works in which Walnut wood is used. There is some doubt as to the species of this timber, some ascribing it to the Pine family, others calling it Casuarina, some Sweetonia, and again Albumah. Mr. W. Tuckey, a practical cabinetmaker, is understood to have first brought the wood into notice, and intends, we believe, to visit Europe with the view of presenting specimens at the International Exhibition of 1862. It appears to be a very valuable acquisition to the cabinetmaker, and probably will add to our export of fancy woods. The tree is said to be plentiful in the extreme southern districts of the colony, growing to the height of 60 feet to [illegible]0 feet, with a barrel averaging between 18 inches and 2 feet in diameter.—(Sydney Morning Herald.)

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	JANUARY 14—20, 1862.	Weather near London in 1861.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
14	Tu	Daphnes.	29.810—29.635	31—25	S.E.	—	3 af 8	16 af 4	49 m.6	14	9 22	14
15	W	Epacrises.	30.027—30.001	31—21	E.	—	2 8	18 4	26 7	15	9 44	15
16	Th	Erica hyemalis.	30.144—30.089	29—25	N.E.	—	1 8	19 4	rises	○	10 4	16
17	F	Erica Wilmoreana.	30.291—30.201	37—30	N.E.	.01	0 8	21 4	28 a. 6	17	10 24	17
18	S	Erica Linnæoides.	30.244—30.170	37—29	N.E.	—	VII.	22 4	44 7	18	10 44	18
19	Sun	2 Sunday after Epiphany.	30.194—30.137	41—30	S.	.65	58 7	24 4	1 9	19	11 2	19
20	M	Fuchsia Dominiana.	30.378—30.220	46—34	S.	—	57 7	26 4	20 10	20	11 20	20

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 42.5° and 30.5° respectively. The greatest heat, 60°, occurred on the 19th in 1838; and the lowest cold,—4½°, on the 19th in 1848. During the period 135 days were fine, and on 103 rain fell.

PROGRESS OF CROSS-BREEDING AMONG FLORISTS' FLOWERS.

ANY new plant which the cross-breeder brings into the world, and which was never in the world before, may be called, figuratively, a new creation. And if you ask him how he knows that his new plant has not been in the world previously—at least, not since the flood—he will give you as the reason, that the remains of the old world have not yet brought to light any fossil kind or kinds of plants which could by their union produce such a form as his new seedling. That, then, forms the text for disputes, without end, about the origin of species, and the races of plants, the extinct vegetation before the flood, the ways of clothing the earth after the flood with forms of vegetation differing from the extinct races, and differently disposed as to countries and climates.

Call the seedlings what they will, I shall never call in question aught on the subject which cannot be proved or disproved by direct experiment. One fair experiment is worth all that the whole weight of the opinions in Europe could place in the scale against it; and as to wrangling about things which cannot be proved by direct experiment, it is not of the slightest use that I can see.

My limited experience has proved beyond the possibility of a doubt, that soil, or the different kinds of soil, have a mighty influence on the variegation of seedlings. Some of the discussions on the subject last summer supposed a chemical origin rather than a diseased constitution to such variegation in plants. Punch being the healthiest and the best-known kind to me of all the Geraniums, as far as its genealogy went, I took to it once again to see if it would turn out seedlings as it has done in former years on my present soil. Punch is only at home on the chalk formation. Give it a chalky soil on a chalk bottom, and cross it by what you please from the variegated section, the seedlings will all come quite green, and no variegation in any one of them. I often said how true to kind so many of the seedlings of Punch, by its own pollen, would come.

Well, last summer, as a last resource, I crossed many flowers of Punch with the healthiest of my stock of seedlings, meaning those most free from variegation, and out of two hundred seedlings from that cross now before my window, nineteen out of every twenty of them are blotched and speckled as if they would be all variegated. What, then, can, or could induce this tendency to variegation, unless it be the difference of soil? By its own pollen all seedlings of Punch in this garden come without a speck of white, but they vary from the parent very much, and not one in fifty of them is like it; whereas on the chalk Punch is all but a botanical species, reproducing itself at the rate of from 70 to 80 per cent.

You are not, therefore, to suppose that you can obtain the same results from crossing a flower of which you read in books, by merely doing what some one else did before you. But it is of much consequence to save you time and trouble to know what has been done by crossing before your day: hence the reason for this rapid sketch of the biography of crossed plants, which you now can see is to be written, without favouring this or that opinion, or anything else which cannot be proved by pollen.

Then, in the order of time, the Rhododendron was the next subject for hybridising; and it was soon discovered that the genera Azalea and Rhodora could not be held apart from Rhododendron, as they were capable of intermixing.

The Pelargoniums were as early, if not earlier, crossed than the Rhododendron; and there was this marked difference in the seedlings of the two great families—those of the Pelargonium were, most of them, barren plants, or mules as they were called, after a turn or two at crossing them; whereas those from the various sections of Rhododendrons were all but fertile to the end of many generations. It was from that disposition in the Pelargonium that the first idea of mules took its rise, and found favour with those who handled them.

In the Crinum and other sections of the great Amaryllid order were also found some barren seedlings from crossing, but not nearly to the same extent as in Pelargonium, and the inference which obtained in respect of them was, that the cause of barrenness was owing to the difference of the constitution of the two parents, and not from the dissimilarity in their looks, or their genealogy. That inference has not yet been proved either way by experiments, and is a subject well worthy the care and attention of cross-breeders, or, I should rather say, hybridisers, for it is only by the union of distinct wild kinds that the doctrine could be proved to be right or wrong.

Then, to understand how a difference of constitution in any two species of plants exists, you have only to suppose one of them to be a marsh or water plant, and the other to be the inhabitant of some dry region. Or, to come nearer home, take any of the recent Sikkim Rhododendrons which Dr. Hooker discovered growing like Mistletoes in a dropping climate, and cross it with some dry alpine Rhododendron or Azalea, and if there is any truth in the doctrine of constitutional discrepancies, the seedlings from that union should exhibit a large percentage of barren plants, or mules, if you like it better.

All that is practically known about the pollen influence of Camellias is this, that one often finds a stray anther and stamen in the most double flower, and that that pollen is better, or will give a better result than that from a half-double flower. But, as in all other cases of breeding in-and-in, I suspect the influence of good cultivation goes farther than that of the pollen in every instance, although some of our best florists believe their "hybridising" is the main element of success; thus confounding two things which are essentially quite different. The province of the florist being the improvement of races, that of the hybridiser the formation of new races to be afterwards improved.

Linaria, Pentstemon, and Calceolaria were the next genera that were crossed. But Verbena melindris, the first of the scarlet race, was introduced five years before the elders of the Calceolarias, Verbena Tweediana and teucrioides soon followed; but we never had any distinct hybrid Verbenas from their union, or at least not more dissimilar than seedlings which may be had now from one pod. Cultivation and not the pollen has certainly been the making of all our present race of Verbenas. There are many things more simple than crossing Verbenas, and I believe few people attempt it in these days. The breeding in-and-in gives us as many mules now in Verbenas; and Verbenas not cross-bred at all, will give more mules from one truss than ever the Pelargonium had given, on which the doctrine of muling was founded.

The old Pentstemon pulchellum was the first of them that were crossed, and a still older one and a very dissimilar kind, called angustifolium was the one by which pulchellum took. The seedlings were very fertile.

Calceolaria made an uncommon sensation at first among all the crossers, from the fact that a stemless herbaceous kind whose leaves even died down in the winter, could cross or be crossed by a shrubby kind, or one with a woody stem. I recollect very well that the doctrine of botanical diversity did not then hold up the hypotheses of muling from such a cause. No seedlings could be more fertile in repeated generations than those which were obtained from such very dissimilar parents. But the doctrine of constitutional conformity was never more near to the truth than in that race. All the original Calceolarias, with all their disparity of looks, had but one uniform constitutional tendency, preferring a moist cold climate, and a degree of shade from the direct rays of the sun which we did not anticipate from what we then knew of the climate of the land of their birth. But it had been a problem to this very season among crossers, whence the self plain flowers of a whole race of plants took to sporting into spotted flowers from the very first. The Messrs. Veitch solved that problem last summer, by introducing a sweet-scented Calceolaria of the arachnoides section with spotted flowers direct from the locality of the former race. The probability is, therefore, that our supposed species in 1830, 1831, and 1832, were mere seminal varieties in a wild state. At all events the new spotted flower might well be the father of a section of our seedlings in 1832-3.

No two plants could be more dissimilar in their appearance to a gardener or to a botanist than Cereus, or Cactus speciosissimus, and the whipcord Cactus flagelliformis, or both of them from the flat-stemmed kinds; but from their union I never yet detected a single barren seedling. Like the Calceolaria, their nature or constitution was exactly alike, and as opposite to Calceolaria as night and day. Yet they went to uphold the doctrine that similarity of constitution will overrule all other tendencies in its effects on cross-seedlings, and that all such will be fertile or very nearly so, not one in five hundred of the seedlings being otherwise.

In 1831 Limmingia broke down botanically by the union of Gloxinia speciosa with the pollen of Limmingia guttata, producing the true hybrid Gloxinia glaucescens, the first of that race now so gay and so very numerous. Glaucescens was thus the head of a new section of Gloxinia, by a hybridiser not far off, and the cross-breeders brought it by crossing in-and-in to what it is, and, as often happens, the new race sported into a newer one, the upright Fiffiana, which upright race is now the more favourite of the two. Speaking as a gardener, I do not see a single point [illegible] the generic character given of Achimenes, Gesneras, and all [illegible] genera into which continental wri[illegible] have attempted to raise [illegible] sections [illegible] ance of genera [illegible] I do [illegible] distinctions put together [illegible] all the [illegible] again [illegible] and [illegible] behold [illegible] of fert[illegible] [illegible] ore [illegible]

ceeding 1830, a small white Gourd from Mexico, named Cucumis osmocarpus, with an egg-shaped fruit, was fertilised by the pollen of a cultivated Melon. The seedling produced a red fruit twice the natural size. The crossing of Melons with wild Cucurbits has been lately authenticated by M. Naudin, of Paris; and the Royal Horticultural Society have agreed, or their Council have agreed for them, that there shall be a competition next October at South Kensington for all sorts and sizes of Gourds, Pocket Melons, Snakes, Squash, and Pumpkins. That indeed was a very good move and a wise resolve. The next turn will be to select parents from these exhibitions for a new fancy set of such "fruit," to vie with illustrated-leaved Begonias, and to hang down from the rafters of the orchard-house until the day before the Show. Thirty years seem now a short period in the history of new races of plants, and in softening down of prejudices and presumptions arrived at from insufficient materials to prove a better, or at least a more practical result.

The coloured Petunias came in after the white at that period —1830. Petunia phœnicea was the first of them, and bloomed first in Ireland that year; and in 1831 it was first seen in bloom on the west side of Manchester, at Lower Broughton in a stove —I saw it there then. Well, what was the difference between Petunia, Nierembergia, Salpiglossis, and Nicotiana? or is there much difference between them yet?—such, I mean, as should be a bar to their union. But you ought to have lived at that period to know which was which, and which was the likeliest thing that should happen but did not yet come to pass. A good deal of dog Latin was wasted in the different views of that relationship; but the Fuchsias coming in directly afterwards, or perhaps before the heated blood in that contest had time to flow and return as does the hot-water system, the thing was soon lost sight of, save in the instance of the pure and unadulterated Petunia, of which we know not the end just yet.

But the Fuchsias were surely in before the time stated, and so they were; but what were they? They were neither parasols nor parachutes, it is true; but, such as they were, some say we have not yet seen their betters. But biography is barred from predilections, or should be, and I say nought about it; but it was full 1836 before ever a cross Fuchsia was in the market. I offered one that summer to Mr. John Henderson, then of the Pine Apple Nursery, and he told me there were several curious ones coming out the following year. Fulgens came by Hungerford Market in a dried state from Mexico that summer; and Mr. Standish made his first fortune out of the next on the list of introduced Fuchsias. From Gracilis and to Virgata of that day – to say nothing of Coccinea the mother of the family—to Minnie Banks and to Comet, which were shown to us of the Floral Committee last autumn twelvemonths, and to Mr. Smith's Mammoth double Fuchsia sent to us since then—I say, Look from Gracilis and Virgata to Minnie Banks and Comet, and from Coccinea to Smith's Mammoth, and say or see how much or how little we owe to the florists.

D. BEATON.

A FEW DAYS IN IRELAND.—No. 10.

LOUGH CREW.

(*Continued from page* 301.)

WESTWARD about a quarter of a mile from the gardens either by road or pleasant walk, we reach the plain unpretending English church, from which fine views are obtained of Balsassiney and the tops of the hills of Meath and Westmeath, and Longford in the distance. The beautiful valley here expands into a wide undulated plain, dotted thinly with trees, and more woods in the far background. The foreground is lightened up with something more cheering and life-like than even hillsides of trees in all their grandeur, in the shape of diversified well-cultivated fields, and great numbers of substantial stone two-storied cottages, speaking of comfort within, which at a distance appear singly, in groups, or in rows, but which are all built in pairs, and fenced in from the roadway with low stone-and-mortar walls, the front garden being intended to be ornamental. Each pair, therefore, has its offices and allotments distinct to itself. "The cottages are built of stone with dressed quoins, lintels, soles, &c. The ground floor consists of a kitchen, small store-room and bed-closet. The floor is done with bricks set [illegible] stairs floor consists of a large and smaller [illegible] placed under one [illegible] so that each tenant has his own entirely to himself, and consists of small dairy, cow-house with loft above, piggery with hen-house above, privy, ash-pit, &c. These are built with brick made on the estate. The cost altogether of such a pair of cottages is about £120." For such a house the garden or allotment behind is generally about one-eighth of an acre. There are many other pairs of cottages of a larger size, with three good apartments below and three above, and corresponding out-buildings. We learned that according to size the rents ranged from 30*s.* to 60*s.* per annum. If larger and with more land attached the rent, of course, would be higher. With even from one-half to one rood of ground, there is no difficulty in keeping a cow, such a help to a family, as so much grass land is easily obtained by the year as will keep the cow in grass in summer and forage in winter.

We were rather pleased to find such an experienced practical man as Mr. Stewart holding, as the result of long observation, ideas similar to ourselves as to the size of garden allotments. The small-bit-ground system has been the bane of Ireland—just enough to be able to live on in good years, and to starve on in bad seasons, land which the holder had no means of improving if he would, and which he feared to do if he could. The nightmare vision of a rise in rent in consequence being ever before his eyes. For a labourer constantly employed and receiving weekly wages, Mr. Stewart considers one-eighth of an acre about as much as he can properly manage in his own time. Many labourers on the estate now know the advantage of living in such a comfortable cottage with such a straight-lined allotment, and receiving regular wages, instead of occupying some crooked piece of ground, part ditch and half bog, and part poor soil, which he could not manage to improve if he would without getting into trouble with his next neighbour.

When good folks in England talk of the landlords in Ireland not doing this and that to improve their tenantry, &c., they should just ask themselves what they themselves could do, if, whatever their heart and intellect might dictate, they found their hands tied behind them in the shape of numberless of the most strange and complicated leases, which neither they nor their children could hope to break through. Mr. Naper has always been an improving landlord, and that part of his estate under his own control would have been an example and a pattern to others; ably seconded as he has been then and now by his agent, C. W. Hamilton, Esq., of Hamwood, and his land-steward, Mr. Stewart; but even he, however assisted, could not have done what has been effected but for the great crisis and social results of the famine years. The distress was then so great that all parties were drawn closer to each other under a great common misfortune. Bonds of consecrated feeling were then rivetted that nothing but death could dissolve. The salt tears streamed down a veteran's cheeks as he told how, other resources failing, the deer park was next to cleared of its denizens to support human life. No pressure whatever was exercised on cottiers and small farmers unable to pay any rent; but those who wished to emigrate had not only the passage money paid, but a sum given to each that they might not be without means when they landed on a foreign shore. Others who preferred remaining at home, and who could neither pay for nor do anything with their crooked, bog-spotted, pool-dotted, bit-and-bit patches of land, had them taken off their hands on the most honourable terms, and as soon as could be were located in cottages and allotments as workers on the estate.

Thus from the great calamity good has ultimately followed. These nice cottages and regular allotments are just so many types of what has been done for large farms of from 100 to 300 acres. We cannot go into details, for if able to do so they would be more suited to the columns of a purely agricultural journal. But just fancy if you can, a good breadth of land held by a number of occupiers, their holdings divided by wide open ditches in which the water stood rather than run, and wide breadths of so-called hedges, in which the gaps occupied no inferior share, good for nothing but harbouring vermin, and occupying good soil with weeds enough to stock the holding, and large pieces of bog and swamp left in their natural loneliness, and the roads in such a condition that the patches of Potatoes or Oats could only be approached in fine weather. Then reverse the picture, and see the hedge-rows levelled and the ditches filled up, the land divided into large regular fields, with divisions of narrow trimmed hedges and ditches, good roads made as an indispensable, a deep outlet obtained for the superabundant water, and the whole ground drained by an experienced drainer (Mr. Miller), 4 feet being the regular depth for the feeding-drains; and the bottom of these filled with a foot of stones obtained on the land. Notice that the bog, at first too soft to bear the weight of horses and plough, is cultivated with the spade until it is compressed and dry enough to bear any weight, and after being dressed with lime is turned with the rest into a beneficial rotation of cropping, instead of the never-ending series of Potatoes and Oats, and Oats and Potatoes, with which it used to be treated, and then observe how these enlarged farms with suitable buildings are eagerly sought after by men of capital, who are willing to pay such an enhanced rent as to afford good interest for the money sunk in improvements, and then you may form some idea not only of the extent but the practical utility, and the ultimately remunerative character of the land improvements at Lough Crew.

Eastward from the garden as already intimated, is the home farm, the buildings not so regular as in the newer farms, but large and commodious with room for housing and sheltering a great many cattle. On the improved breeds of sheep, ditto of pigs, the older ones well known at shows and more like donkeys than pigs, and the long genealogies of bulls and cows, we will not enter. The house of Mr. Stewart on the yard side is unpretending but commodious, and on the lawn side very showy in the pointed Gothic style, with a fine field of Mangold instead of a flower garden in front. The dairy is large and roomy as it would need be, heated by hot water when necessary, the churn being moved by a horse and machinery outside. All the carts, ploughs, machinery—as mowers, hay turners, and utensils were clean and dry, and protected from the weather when not in use. A new steam engine was just put up to thrash, cut, bruise, saw wood, &c., the latter preventing it being a sinecure on such an estate. The hay (hay they call it), was, as far as we recollect, built on stands that none should get musty near the ground, and all sorts of corn were thus built, the floor being made of stout pieces of wood laid across low cast-iron columns, with broad rounded tops, so that neither mouse nor rat could pass them into the stack. The only chance would be getting up concealed in a sheaf. A stack for want of a frame ready was built on the ground the other year, and we were assured the loss sustained by vermin would have paid for the stand, and then when put up it would last many years.

The fineness of the green crops, Turnips, &c., and crops in general, and the neatness and regularity of the hedge-fences, would almost at present enable a stranger to mark out the boundaries of the estate. This distinction, however, will not last long, and the sooner it is removed, the better as, to their honour be it said, many more gentlemen are doing everything they can to improve their estates. There are some 2000 acres at present in Mr. Naper's own hands, including the home demesne with its fine plantations and ornamental grounds. The whole of the grass land included in the park ranks as so much of the farm, from which not improvement and pleasure alone, but we believe profit is expected. A land-steward must have no sinecure who can thus superintend all this, and the general improvements on the estate. Mere philanthrophy is a fine thing however directed; but it is best of all when the question "Does it pay?" can be answered satisfactorily. The true test of agricultural improvement is the finding that it secures an advantage to the landlord, as well as a more present advantage to the farmer and the labourer. We forgot to say that we believe any of the farmers, with leases, may have their farms drained by paying a rise of five per cent. on the outlay.

With all this material improvement, what of the great field of mind, as influenced by education? We are convinced that when knowledge is appreciated, parents will make any sacrifice to procure it for their children, and that it is most valued when paid for. It requires a certain amount of intelligence, however, to appreciate knowledge, and when truly valued it is difficult to obtain in many country districts. Gentlemen may do much by opening up facilities in their own neighbourhoods. Mr. Naper has provided these facilities by building and supporting a nice school for the children of the district. We forget as to the schoolmaster, but we believe there are two female teachers. Though, properly speaking, Mr. Naper's own school, he has placed it under the supervision of the National Board of Education. There are about one hundred children generally present, the boys being taught reading, writing, and arithmetic, and in addition to these the girls are taught sewing, &c. Mr. Naper and the ladies take great interest in the working of the school and the progress of the scholars, give prizes for good conduct, cleanliness, and regular attendance, and a fine treat of tea, &c., on the terraces at the house in summer.

The neighbourhood is peculiarly favoured in the matter of education. We regret now we did not see the town of Old Castle, represented to us since as the openest and cleanest little town in Ireland. It belongs to Mr. Naper, and expects to do great things when the railway reaches it. Mr. Naper of late years has built forty nice slated cottages of six rooms each, with suitable out-offices, for labourers and artisans; and Mr. Gilson, an old townsman, left £25,000 for the purpose of educating and clothing the poor of his native parish.

These schools, by a plan laid down by the Court of Chancery, are managed by five trustees, three laymen, the Chief Secretary for Ireland, J. L. W. Naper, Esq., A. S. Dease, Esq., and the Protestant and Roman Catholic clergymen of the parish. The schools are in four departments—infants, boys, girls, and agricultural. A sound practical education is imparted wholly free. About 500 attend the various departments. The sewing of the girls is much commended. A farm of twenty acres has been procured at which the boys are taught practically as well as theoretically. Boarders are admitted to the latter department, and Mr. Naper pays for two pupils selected from the small tenantry on his estate.

It is not alone at children's festivals that the residents of the mansion exchange social courtesies with the inhabitants of the cottages. This is frequently done, and perhaps more especially at the harvest home—a time anxiously looked forward to as one of high enjoyment. The thus unbending of the rich takes nothing from their dignity; but we know it does increase the feeling of self respect in the working man, that acts as an elevating influence for many a day afterwards. We had heard so much of these harvest-home gatherings that we can picture to ourselves the whole scene: there are Milroy and his man for several days ornamenting the barn as for a feast of the aristocracy. When all is ready there are some 120 workmen sitting down to the loaded tables, and individually and collectively proving that Pat can make beef and other good things to disappear with as keen a relish as either Sandy or John. When the solids are disposed of, the ladies of the mansion acting as waitresses, the punch is introduced, and the cheering and hurrahing at the loyal and patriotic toasts would be sufficient to start every rat and mouse from the premises. The Chairman then gives the host and hostess, and the junior members of the family, and up rises the worthy proprietor to return thanks for the honour conferred, and in the most kindly way giving a lecture on social improvement, which we would like to see in print; telling them all about his new steam engine, which, though an assistant to labour, will, just as in the case of other machinery introduced, never cause a man less to be employed; then descant on cottage building, labourers' comforts, and various modes and means of social progress; and then telling them that he depended on each and every one to lend a helping hand, clap their shoulders to the wheel, and with a strong pull, and a long pull, and a pull altogether, old Ireland would prosper; and concludes with drinking their good health, coupling with the toast the names of his head servants in all departments. We say nothing of the three-times-three and one-cheer-more, amid which the fiddlers enter and say they are ready, the young ladies and gentlemen enjoying the entertainment as well as the humblest cottager; but this we will say, that if such landlords and masters are multiplied, and they are multiplying fast in Ireland, or our ears must have been hocussed and our eyes had glamour thrown into them; and, if earnestness and determination, and kindliness on their part are met by gratitude, industry, and fidelity on the part of the employed, then the country must prosper, and the day be not far distant when the isle of Green Erin shall become socially and morally, as well as physically, "the first flowe[illegible] earth, th[illegible] first gem of the [illegible]"

[illegible]

THE IL[illegible] [illegible]. The [illegible] Number [illegible] [illegible]ecember, Part XII [illegible] this work, opens with a plate of two [illegible] Mr. Banks' best F[illegible]sias. Plate 58, Fuchsia Minnie Banks, [illegible]he most beautiful of the light-flowered section;" and Fuchsia [illegible]omet, or Banks' Comet, "the most effective, indeed, of all the [illegible]ark Fuchsias." We have seen well-grown plants in bloom of [illegible]oth these Fuchsias, and [illegible]n attest to Miss Sowerby's drawings [illegible], and to [illegible] [illegible]rior merits. The "properties of [illegible] [illegible]n [illegible]-foliaged plant, are nex[illegible] [illegible] [illegible]hibits five new varieties [illegible] [illegible]pacri[illegible] [illegible] The [illegible] Tricol[illegible] [illegible] fact before us, that Epacris is more susceptible of improvement by cross-breeding than Heaths. In addition to the five kinds represented, there is a list of the next best sixteen kinds of Epacrises for general purposes, a review of the whole family, with the best practical instructions for their growth and management throughout the year. Plate 60 represents the charming little Sedum carneum variegatum in a pot, also by Mrs. Withers. This is one of Dr. Siebold's plants from Japan, probably as hardy as Sedum Sieboldi itself. But to represent it to the mind's eye, we have only to say that the front row of a ribbon-border is of some variegated plant, which looks, at 20 yards distance, like the Variegated Alyssum. On coming up to it, however, we find it to be Sedum carneum variegatum, the carneum or fleshy colour is in the wavy branches and their subdivisions, the flowers being yellow. The lists of very elegant and tiny plants which follow the Sedum, and the suggestions how to dispose of them, for decoration, in and out of doors, in the air, on rocks, mounds, and beds of rustic baskets are, of themselves, worth the price of this Number to some people. Plate 61 will surprise many. Here we have six kinds of Tree Carnations and Tree Picotees, selected from the finest collection of the new race in Europe, and represented by Mrs. Withers as true as Nature. Here, also, follows an article on the new branch of conservatory decoration in winter and spring without forcing any of these "trees," which will be most welcome to the ladies and to many of their gardeners. Plate 62 exhibits—first, "the prettiest illustration of the genus Cassia yet known in gardens," said to be Cassia australis, *var.* schinifolia, a spring-flowering greenhouse plant; secondly, Bouvardia Humboldtii, recently introduced from Mexico. This is the most distinct kind in the genus, with large white flowers, and comes into bloom after leiantha and longiflora; and, thirdly, Myosotis montana, which is said to be an improved Forget-me-not, from Myosotis alpestris in some Belgian garden, whence it was recently introduced. The improvement consists of larger blossoms and a dwarfer habit of growth than that of alpestris. Here, after the ways of Forget-me-not have been treated of, we are told that "one of the finest species of Forget-me-not, as an early summer-flowering plant for parterres and beds, is the Myosotis sylvatica of gardens."

THE GLADIOLUS.

Few flowers have made in so short a space of time such rapid progress in public favour as the Gandavensis varieties of the Gladiolus; and as this is the best period for making or adding to collections, it may not be out of place, with the experience of the last two years before us, to give a few hints as to its management and as to the additions that may be fitly made to a collection of them. In so doing I look at them as a florist's flower, and shall not attempt to enter into the question of their suitability for garden decoration. There are other and better hands capable of doing this, and I do not wish to go beyond my own province.

The history of the flower has been so recently given by Mr. Beaton, who, *au fait* in this as in all matters connected with plants, many years ago began the pleasant taste of hybridising, when the late Dean of Manchester, Dr. Herbert, was so successfully pursuing his experiments amongst bulbs. The French were beginning to draw our attention to the bulbs, and new varieties were reaching us from the other side, when our gracious Sovereign gave a great impulse to their culture by taking them under her special patronage. Their being placed on the royal table led the frequenters of the Court to follow the example set them, and a demand almost unprecedented in the history of flowers has arisen. Fortunately they increase very rapidly, and hence they are being generally distributed over the country; and before this unhappy war broke out in America were being eagerly sought for there, for one Paris firm this time last year was looking out for 30,000 bulbs to supply one order. Alas! now muskets and minnie balls would be more likely to command a sale.

There was an enterprising nurseryman who had been long known as a successful hybridiser—Mr. John Standish, of Bagshot, who was determined that our lively neighbours should not have all the benefit and glory; and as he had already been so eminently fortunate in Fuchsias—for Standishii was amongst the first of the new race, and as his hybrid Rhododendrons had shown [illegible] how best to obtain form and colour com[illegible] constitution, he set himself to the task

In this he has succeeded beyond his expectations. Both last season and this have shown that he has not only equalled but distanced, especially in the matter of form, the foreign varieties. Monsieur Souchet has been the most successful raiser there, and each year some of his varieties are introduced to us through the medium of the well-known Paris firm of Thibaut & Keteleer, of the Rue de Charonne. But I think we shall not have need to go across the water to supply our gardens.

With regard to form, for which I am a great stickler, regarding it as the first point in a flower, Mr. Beaton says the florists will never be able to make a circular Gladiolus. Perhaps not: but still there is a model which I think we may strive to attain to. As the bloom is composed of two triangles, we must look that the petals forming them be arranged regularly, and that they be broad, and not pointed, narrow, or jagged in the margin; and I believe that the more circular the throat of the flower is the greater will its beauty be.

Then substance must be obtained. We have it now in some of the varieties; and as they become plentiful flimsy flowers will be discarded. Nor do I think those kinds which partake too much of the oppositiflorus blood will last in favour long. They may many of them be very beautiful in colour and even in shape, but they are not the thing for a box of cut blooms: and therefore when we can get those which show entirely *en face*, we shall discard those *dos-a-dos* gentlemen, or ladies, as the case may be; and I doubt not, as the flower is so tractable and exhibits such an endless variety of colours, shades, hues, tints, stripes, bars, &c., that by-and-by those only which fulfil these conditions will be retained. In the meantime, as the Irish saying runs, "We musn't throw away dirty wather till we can get clane."

I would also add, as a requisite, that the flowers should be closely set together. If too far apart the beauty and symmetry of the flower are spoiled. These requirements may seem to some *exigeant*; but I am sure in a few years time that we shall find many flowers now in repute discarded, because they do not possess qualities which now we are not so particular about, simply because the flower is a new candidate for the public favour.

Their cultivation and management has had some light thrown on it by the experience of the last two or three years. Mr. Standish, finding that they throve so well in the light sandy soil of Bagshot, came to the conclusion that they did not like manure; and even recommended, where the soil was too rich to impoverish it by burning some. He now, however, thinks differently, and advises the addition of well-rotted manure to the bed. They will, in fact, do in any good, rich, light garden soil, but are impatient of bad drainage; and clay soils, therefore, will hardly grow them successfully. I would myself recommend that they be grown as carefully as we should grow a bed of Tulips or Ranunculuses, for they are assuredly worthy of our care.

The bed ought to be prepared now. The soil should be well turned over and exposed to the influence of the weather; and if it be not sufficiently rich, the addition of some well-rotted manure may now be made. In March or April, as the weather may best suit, the bulbs should be planted. Drills should be drawn across the bed (one 4 feet wide I should consider a good size), at a distance of 6 inches apart. The bulbs may be placed about 6 inches apart in the row and 3 inches deep, placing some silver sand under and over each bulb. Where the sorts are named the better plan would be to number them as in a Tulip-bed, and arrange them as to height where this can be done. They will require very little attention during the summer, save that which every gardener must consider of main importance—weeding and keeping the ground well moved about. When the flower-stems begin to rise stakes should be placed, as high winds are very apt to twist them about and either loosen them or break them off. If any one have an awning either for Tulips or Picotees, I should say by all means put it over the Gladiolus-bed. Do not let it down save in heavy rains or during scorching sun. But I am quite sure they are flowers that will show the advantage of taking this trouble with them. And if the Tulip-awning be moveable it may as well be there as put by; and for this reason I would recommend the bed to be 4 feet wide, as that is the orthodox width of a Tulip-bed.

When the bloom is over and the foliage begins to decay the bulbs may be taken up: and their drying is a matter of some importance. They do not require, as some others, to be dried off gradually, as they then are apt to contract mildew, but it should be done quickly. I have found that it is a very good plan to place each variety in a small flower-pot, and stand them at the far end of the greenhouse flue, where the heat is moderate. They thus dry rapidly, and may then be placed in drawers, as Tulips are, or else in paper bags, and kept in a cool dry place until planting time comes round again.

As to *sorts*, the choice will depend on the pocket of the purchaser: and I therefore give three lists—the first comprising cheap varieties, mostly of foreign raising, which may be purchased at from 5*s*. to 10*s*. per dozen; the second, of more choice and new varieties of French origin; and the third, a selection of Mr. Standish's best flowers.

LIST NO. 1.

Brenchleyensis, deep vermillion
Couranti fulgens, crimson
Calandulaceus, salmon rose
Don Juan, red
Endymion, rose, lightly tinted with violet
Galathée, flesh mottled with crimson
Hebe, pale flesh mottled with carmine
Fanny Rouget, rose, lower petals deeper
Mathilde de Landvoisin, white, striped with carmine
Monsieur Vinchon, rose, striped with deep salmon
Ninon de l'Enclos, carnation rose
Osiris, purple, and white (curious)
Othello, light orange red
Rebecca, white and lilac
Sulphureus, sulphur
Vesuvius, deep glowing red

LIST NO. 2.

Achille, deep red, marked with white in the centre of each petal
Berthe Rabourdin, pure white, spotted with carmine
Docteur André, bright orange
Edith, carnation-striped
Eldorado, yellow, chocolate feather and stripes
Eugène Domage, deep crimson, dark throat, one of the richest in colour
Isoline, carnation, violet spots
La Quintinie, bright light orange
Monsieur or Madame Lesèble, white, spotted with violet rose
Mademoiselle Marsault, flesh white carmine and violet spots
Napoleon III., bright scarlet-striped
Princesse Clothilde, salmon rose
Princesse Mathilde, light rose and carmine
Rembrandt deep scarlet, very bright
Raphael, deep red vermillion
Solfaterre, sulphur, with brownish feathers, nearly yellow
Solferino, orange scarlet violet, carmine spots
Victor Verdier, bright red
Vulcain, scarlet, velvety purple

LIST NO. 3.

Agnes, pure white, rich crimson in the centre of each petal forming a star
Aurelian, scarlet, deeper in the throat
Basil, carmine, white centre, and deep crimson blotch
Clara, white with yellowish tinge, beautiful light crimson star
Cordelia, white, ruby throat and feathers
Dr. Hogg, deep crimson
Goldfinder, lemon, buff throat, pure marking
Ivanhoe, dark scarlet
Lady E. Seymour, pale buff, with pinkish tinge
Lemonade, yellow, striped in each petal
Minerva, clear white, with pink feathers and throat
Mowbray Morris, scarlet centre, damask markings
Mrs. Dombrain, blush, striped with lake and crimson lip
Robin Hood, scarlet, violet throat
Rosenberg, deep scarlet, blood colour
Samuel Weymouth, brilliant scarlet, yellow throat
Thuza, white, violet feathers
The Caliph, creamy rose, golden tinge
Tom Moore, crimson, with violet crimson feathers
Viola, delicate lemon, purple feathers

I may, perhaps, as a florist be too sanguine, but I believe we shall yet see flowers surpassing in beauty even these; and I cannot but think that if the public taste is roused to expect it, the greater care will be exercised by hybridisers to obtain form, colour, size, and substance. I may, perhaps, add that those who may desire to have a good and cheap bed, may do so very effectually by procuring some of the mixtures of Mr. Standish's seedling flowers, from which I had a very handsome selection the past season.—D., *Deal*.

OBTAINING FRUIT FROM NEGLECTED VINES.

Will you instruct me how I may obtain some fruit from any of my pot Vines this summer? Six or seven of them are from eyes last spring, and are not much thicker than a common pencil, and a few are old plants which have been grown on the "spur system." One or two I think have been forced in vineries, if I may guess by the roots on the Vines. They were out of doors all the summer and made little new wood. I have both old and young in a shed, but I can afford an intermediate-house or even a stove for some of them if necessary. My object being to get a little fruit this season.—H. A. C.

[From what you say of the old Vines, we fear you would do no good with them, as the buds made last season, probably, would not be perfectly ripened. The wood of the young Vines, also, we fear is rather weak; but more will depend on the thorough ripeness and hardness of the wood than its mere thickness. If the wood is hard and the eyes plump, you may give them a trial, and if they do not come up to your expectation you can prune back and grow for fine plants for another year. We would, therefore, place old and young together in a house at about 45°, and in a bottom heat of 70°, increasing the former to 60° in a month, and the latter to 80°. This will cause them to break early, and as soon as the shoots are 2 inches or 3 inches long you will know what they will do. No care now will make amends for want of proper care last season. If the plants were not matured nothing will make them produce fruit.]

THE IN-DOOR PLANT-CASE.—No. 7.

(*Continued from page* 291.)

One of the pleasantest uses to which to put this little in-door hothouse, is that of forcing some of our favourite flowers. Last spring I had a constant succession of Lilies of the Valley, with their fragrant blossoms, and their peculiarly fresh green leaves, and Sweet Briars also lent their delicious scent to every breath of air that passed their freshly-opened leaves.

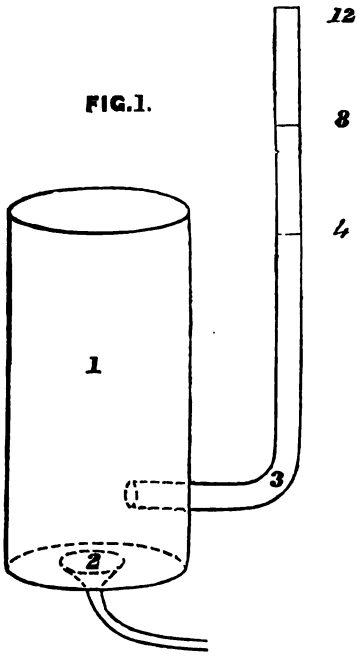
Forcing generally requires much the same kind of treatment. A great deal depends on plants being well prepared, in which case it is slightly difficult to prevent their growing when given air and light with sufficient warmth and moisture. Lilies of the Valley do not like to be disturbed. They should be taken up from a long-standing bed and crushed into a pot—just a good-sized clod of earth with roots all undisturbed. These plants should stand out of doors till late in the autumn, being kept fairly dry, and then when the buds have a little begun to swell they should be placed in the warmest corner of the in-door plant-case, and not be allowed again to become quite dry. The corner away from the window, at the warmest end, does best for them at first. When fairly started a rather lighter place, and when growing up a cooler one, will be most appropriate. My Lilies last year were out in five or six weeks from the time of putting them into the warm case, and nothing is more charming than the fresh waving masses of bright green leaves, which last for many weeks after the flowers are gone. The Sweet Briar, a short bushy plant being best, is even quicker in becoming pleasant, for the leaves are very sweet when they have scarcely begun to open. Sweet Verbena, and Sweet Woodruff, are other things that may be brought on delightfully, and Fairy Roses, and the pretty crimson China, if only we are careful to give air enough, Carnations, too, and Pinks, Heliotropes very easily, and the pretty, graceful Deutzia gracilis. After January begins, Achimenes, Gloxinias, Begonias, &c., may all be starting in well-drained pots of soil covered with cocoa-nut refuse, and many bedding plants may be also brought on for a stock of early cuttings.

HEATING HORTICULTURAL BUILDINGS BY GAS

Is a subject which will be of great interest to all amateurs, especially to those who have to mind their own fires. I have had considerable experience in applying gas for heating purposes, and shall be glad to give to your readers the result of my experience and experiments. First, let me say, that gas has much to recommend it; it can, in many places, be easily applied to a stove or hot-water apparatus. It is clean, inasmuch as it is not accompanied by dust and ashes, nor the trouble of kindling with the uncertainty of keeping in, which always makes a fire the source of anxiety. Gas is safe as soon as lighted, and will sustain a regular heat, which can easily be increased or diminished by the tap; but the application of it has its difficulties, which are but too often increased by parties trying to heat with gas, where, from some cause or other, fire-places or flues will not draw, or because there is not a chimney or flue into which the smoke can be turned; in fact, after other appliances have failed gas is resorted [illegible] because it will do, or rather is supposed to do, without [illegible] chimney. Now your readers would consider [illegible] lighting a fire in a room with- [illegible] smoke and deleterious gas, and [illegible] such an act would be [illegible] in equal degree [illegible] pipe, or chimney [illegible] it [illegible] essentially requires a flue; for if smoke and sulphurous gas of a coal fire are obnoxious, the gas-fire vapour is most certainly more pernicious and deadly, as I shall presently show—in fact, it is the concentrated essence of all the most pernicious parts of ordinary smoke. I state this strongly, in order that none of your readers may be misled in their desire to produce a healthy, warm atmosphere; and I endeavour to use plain words, and avoid as much as possible chemical denominations, in order that I may be understood by all.

By the foregoing it may be seen that it is absolutely necessary that the gas-stove should have a flue; and this leads me to the stove or fire-place. I am of opinion that you may heat any kind of enclosed fire-place with gas. I have at this moment several modes or kinds working satisfactorily, and I purposely varied the mode in order to test the possibility of successfully using gas in any and every case, and certainly was interested in the experiments by the extraordinary result. Now, for a few lines I am compelled to use chemical words, but will try to simplify them as much as possible. A retort is a vessel with an outlet so placed that the gas generated from substances confined in it can pass out. Carbonic acid is a gas which is produced by burning the air we breathe, and, being heavier than the air, will sink rather than rise if ejected at any altitude. Heated air, being lighter than the atmosphere which surrounds it, rises. Gas is a vapour or a spirit, and can, like a liquid spirit, be diluted; it requires air to ignite it to produce light, and, by a proper admixture of air, will upon ignition produce more heat than light. This, of course, is an important point, for it is heat not light which is required; and, therefore, before describing the stove, I will say a few words about the best form of burners. I have found that the kind which produces the greatest heat is a sheet of copper gauze wire, confined in a ring or belt of about 3 inches circumference. The belt is about 3 inches broad, and is suspended over a ring of jets. If the light be applied to the jets the gas will, of course, burn through the wire with the usual flame; but if a light be applied above the gauze wire, the gas, or rather the gas mixed with the air under the gauze, will ignite and burn with a very pale blue flame, giving little light but great heat, and very little inclination to produce smoke or lamp-black like that produced by jets of gas burning under a plate. I have found that the above kind of burner is the best, and will now try to show an interesting experiment, which will be best explained by the annexed sketch, *fig.* 1. Upon lighting the burner at 2, the cylindrical stove speedily became hot, but the flue did not act or draw, and, in a short time, the gaslight went out. At first I imagined this arose from a down or back-draught; but finding that lighted paper drew, I was led to examine the cause. Upon relighting the gas, I shortened the flue to 8, but found no advantage. I shortened it still lower. The gas burned more freely, but upon applying a lighted candle over the top of the flue, I was surprised to find that there was no up-draught; but accidentally passing the candle up the side of the flue from 3 to 4, the light, to my astonishment, went out when near, but below, the top of the flue, just below 4. Here evidently was something for investigation. I soon found that my stove was a retort producing carbonic acid [illegible] higher up the flue.

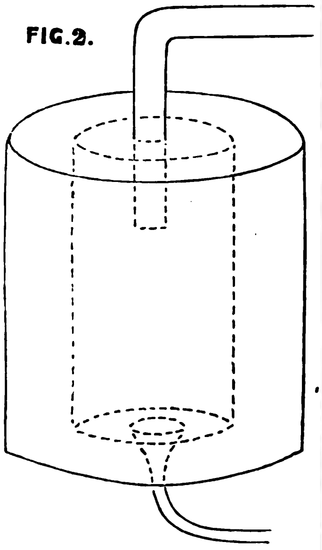
FIG. 1.



1. Is the stove, a plain cylinder.
2. The gas burner.
3. The pipe or flue, marked 4, 8, and 12 feet high.

than 4 by the heated air of the stove, that the hot air could lift it as high as 4, where it poured it over the sides of the flue, but in a state obnoxious to everything that lives, whether human beings or plants.

FIG. 2.



I then removed my flue-pipe to the top of the cylinder as in *fig.* 2, and found that to be a complete remedy, the heated air being sufficiently powerful to carry off all carbonic acid gas generated in the stove. I found by a series of experiments that I could extend the flue-pipe down into the cylindrical stove, as shown by the dotted lines at No. 2, to a certain distance, but no further; my object being to obtain as great a body heat as possible in the stove, before allowing the heated air to pass up the flue; and I am convinced that the whole secret of properly using gas for heating purposes lies in proper provision being made for the escape of the carbonic acid which is generated by all gas-stoves. I have shown how it is produced, and how it may be conveyed away. I have now four gas-stoves, of different descriptions, working satisfactorily, but every one required a peculiar and separate adjusting and regulating. In each, at first I had to contend with the tendency to produce carbonic acid, but found in each case that a proper and easy-adjustment of the flue produced the remedy. The presence of carbonic acid is easily detected—the light will burn dim or be extinguished. If you fancy that a down-draught has blown out your gas, test the draught with a lighted candle; if it stands that test, introduce a lighted candle into the gas-stove when it is lighted, and if you find the candle dimmed or extinguished in the upper part of the stove, rely upon it that your flue or pipe is not sufficiently large; but in adjusting the size of pipe, care must be taken not to make it too large, for in that case a large proportion of heat would escape up it. The point required is to retain as much heated air as possible, and to allow only the sufficient quantity to pass to carry off the carbonic acid. I have illustrated my experiments by a stove of a cylindrical form, but I am disposed to think that the "Gill" stove is the best external form, for it presents the greatest amount of heated surface to the atmosphere. I warm the hall of my house with one, heated by a single gas-burner, and this, too, in a place were a coal fire gave great trouble from down-draught; but stoves of this description are expensive, and a simple cylinder with an outer casing about 2 inches larger than the minor one, will create a warm current of air to flow between the two. However, the gas-burners can be applied to any form of closed stove, provided that means are taken to prevent the too speedy escape of the heat up the flue. This may best be done by contracting the upper part of the mouth of the flue, or placing there a damper. It is also well to avail of any adjacent chimney-flue into which the pipe or flue can be turned.

I may state as a proof how generally the heat may be applied, that I warm my bedroom; an orchard-house, 30 feet by 14 feet broad and 6 feet high at the sides, I use it for a drying closet, and the "Gill" stove kept my hall at a pleasant temperature during the whole of the long frost last winter, burning night and day, without ever failing, without any attention. Let those who have to keep an ordinary fire lighted think of that. Now, I may be told that this is all very well, but that it is a costly and an expensive mode of obtaining heat. I am prepared to contend that it is not more costly than other modes, provided proper precautions are taken. The supply of gas ought to be conveyed through a regulator, to check the excessive pressure which in many places forces the gas quicker through the pipes and burners than it can be consumed. The pressure may arise from many causes; if the manager of the gas manufactory chooses, he can put it on, or if your locality be very high the pressure will be greater than on those who are lower. In fact, there are so many causes of pressure that it is very needful, if economy is studied, to have gas-regulators wherever gas is used in any way.

From the foregoing, I think your readers may see that gas is applicable for warming conservatories and similar horticultural edifices; and in conclusion let me remark, that I am not either a chemist or a gasfitter, but an amateur, and that any of your readers may accomplish with ease what I have effected.—W. X. W.

EFFECTS OF THE WINTER OF 1860-61 ON PLANTS AT TORQUAY.

As it may be interesting to some of your readers to know what plants, shrubs, &c., withstood the very severe winter of 1860-61 in this climate without any protection whatever, I subjoin a list of such as I have in my small grounds, all of which stood without a change of foliage, excepting such as I have noted. The plants were well established, but none had been planted more than three years, some not so long. My house is situate rather more than a mile from the sea, and stands on an elevation of about 350 feet above it. I am sheltered by rising ground and a small plantation from the north, north-east, and north-west, but fully open without any protection whatever to the east, south, and west. I marked the thermometer as low as 23°, north aspect, at 8 A.M.; but I believe in my immediate neighbourhood it fell as low as 17°.—J. M., *Torquay*.

Pinus insignis
Cupressus macrocarpa and lusitanica (Cedar of Goa)
Ligustrum japonicum
Escallonia organensis
Euonymus fimbriatus, very much cut up, lost all their leaves, now quite recovered
Coronilla, in bloom nearly all the winter
Abelia uniflora
Swammerdamia antennaria
Stauntonia latifolia, against a south wall, bloomed in March
Paulownia imperialis, deciduous
Juniperus chinensis
Mespilus diffusa
Photinia serrulata
Pernettya mucronata
Ceanothus papillosus, against a south wall
Berberis Darwini, Fortuni, and aquifolia
Kalmia latifolia
Deutzia gracilis
Taxodium distichum, deciduous
Spiræa prunifolia flore pleno
Fabiana imbricata
Veronica, blue, pink, and white, very much cut up, apparently almost killed, now quite recovered. The blue and pink at the present time in beautiful flower.
Aristotelia
Araucaria, 7 feet high, transplanted in June, 1860
Arbor Vitæ
Deodara
Wistaria sinensis
Magnolia grandiflora
Acacia Brownii
Griselinia littoralis
Myrtus apiculata
Eugenia Ugni
Ericas, a few hardy ones
Passion-Flowers
Clematis
Jasmines
Honeysuckles, French and common

My Roses did not suffer in the least; nor did the Portuga Laurel, common Laurel, Laurustinus, or Bay.

I lost Genista, Acacia armata, and another delicate Acacia; also several seedling Australian shrubs which had withstood the previous winter.

INCREASING TEMPERATURE OF A PINERY.

In the place I have lately come to there is a pinery about 24 feet in length, in which, of course, are grown plants of all sizes, including fruiting plants. I have cut some very nice fruit during the three months I have been here, and have some very good ones ripening, but some lately started do not seem to swell fast enough to suit me. The mode of heating is by a flue, and it only runs along the front path, so that there is nothing but the top to give off heat, and I cannot, by constant and almost continual attention to the fire, night and day, raise the temperature higher than from 60° to 65°, without sun. I have managed to keep it from 55° to 60° during the nights. No plants can look better, but do you think it hot enough? The pit was not taken out and fresh tan added from the end of last February until I came at the end of September, and the back of the pit seems rather cold where the fruiting plants are.—A Young Gardener.

[It is as well not to have plants fast started. However, they would be as well not to be below 60° at night; but 55° would do for the general stock, provided the moisture at the roots and in the air is proportionately small. You could increase the bottom heat by adding fresh fermenting tan. If the flue, however, goes only in front, and forms part of the pathway, you will have some trouble in keeping up heat, unless the sides of the flue act also on the pathway, by the earth being sloped away from the flue, in the way shown in a late Number. If your furnace is deep enough, it would be a good plan to place a small boiler over it, and take a pipe along the back for top heat, and bring one pipe or two pipes back underneath the bed for bottom heat.]

METEOROLOGICAL NOTES.

LINTON PARK, KENT.

—	Thermometer.		Frost.	Rain.		Barometer at noon.		Wind at noon. No. of days each month.								Not ascertained.	Total days.
	Highest	Lowest.	No. of days.	In ins. and 100 parts d.	No. of rainy d.	Highest each month.	Lowest each month.	E.	S.E.	S.	S.W.	W.	N.W.	N.	N.E.		
January	55°	16°	22	.38	5	30.09	29.40	2	7	3	8	2	2	3	4	...	31
February	55	22	8	1.82	18	30.35	29.10	1	2	6	12	...	1	5	1	...	28
March	59	29	12	2.46	19	29 91	28.60	...	...	3	18	7	1	2	...	...	31
April	67	29	18	.97	6	30.23	29.30	2	1	1	2	...	3	5	16	...	30
May	81	32	1	1.19	6	30.04	29.24	...	2	1	5	3	4	9	7	...	31
June	85	44	...	2.14	15	29.87	29.32	1	...	6	7	2	...	6	6	2	30
July	80	46	...	3.25	17	29.83	28.89	...	1	11	15	3	1	...	...	...	31
August	88	45	...	.93	10	29.90	29 41	...	1	8	16	4	1	1	...	...	31
September	81	39	...	2.16	15	29 80	28.97	...	3	9	10	2	3	3	...	...	30
October	79	38	...	.89	13	29.90	29.25	5	9	7	1	...	...	4	5	...	31
November	55	21	16	6.10	17	30.17	28.86	...	1	3	14	4	3	3	2	...	30
December	57	27	13	1.72	17	30.13	28 87	1	1	8	2	7	2	4	6	...	31
Total in 1861	...	...	85	24.01	158	...	...	12	28	66	1.0	34	21	45	47	2	365
Same in 1860	...	...	93	33 66	216	...	...	13	27	64	88	29	49	42	54	...	366
" 1859	...	...	93	29.55	151	...	...	8	53	21	125	11	59	9	78	1	365
" 1858	...	...	93	16.33	116	...	...	16	71	16	73	24	58	19	87	1	365
" 1857	...	...	...	24.33	137	...	...	14	47	37	81	37	38	21	86	4	365
" 1856	...	...	89	27.79	169	...	...	14	44	34	99	29	42	28	72	4	366
" 1855	...	...	114	20.84	160	...	...	21	32	23	63	36	48	25	115	2	365
" 1854	...	...	122	...	...	...	...	32	17	29	100	62	41	36	47	1	365
Average of above years			98	25.22	158	...	...	16	40	86	92	33	45	28	73	2	...

From the above table it will be seen that the months of January, April, August, and October, in 1861, have been very dry, and November the wettest month. The greatest fall of rain on any one day was November 6th, when 1.22 inches fell, and in the first fourteen days of that month 4.63 inches of rain fell. The rainfall of the year is slightly under the average of the last seven years. The hottest day was August 12th, 88°; and the coldest night that preceding the 10th of January, being 16°. The number of frosty days is, however, under the average. February and October being unusually mild, in other respects the features of the past year have not been remarkable for frost or rainfall; but, in point of heat and a genial atmosphere for vegetation, it has certainly been much above the average. Its feature in this particular may thus be summed up.

January commenced with severe frost which continued to the middle of the month. The end dull and dirty [illegible]ut little rain fell.

February.—Mild and favourable [illegible] ne end mois[illegible]

March.—On the [illegible]

[illegible]an usual in Marc[illegible]

April.—Weather [illegible]

[illegible]k, but keeping vegetation [illegible]

May.—Cold at the beginning, fin[illegible]

[illegible]une.—The beg[illegible]

[illegible]hole favoura[illegible]

[illegible]y.—More dul[illegible]

[illegible]o hot as it is g[illegible]

[illegible] whole

[illegible]

days and nights being considerably warmer than they generally are in October.

November.—The first fourteen days remarkably wet, after which there were some sharp frosts; the end changeable.

December.—Generally dull, but little frost, and not much rain fell. It is needless here to enter into the merits of the past year in a horticultural point of view: suffice it to say, that most, if not all, of its failings may be traced to the cold, wet summer and autumn of 1860, and the severe winter that followed killed so many things in many places that had withstood several preceding seasons. We may, however, hope the ensuing summer to be a more fruitful one; so far as we can judge by the appearance of fruit trees, they all seem promising.—J. Robson.

CAMELLIA BLOOM-BUDS GROWING SLOWLY.

What is the reason of the buds of my Camellias making apparently no progress for several weeks? They appear to be now in just the same state that they were a month since (looking like an unopened Rose-bud). The plants seem healthy, and have plenty of water. They have had no heat, nor can they have, except they are taken into a sitting-room where there is a fire. They have been on a staircase-landing. You said in a former Number they should have as much water as Oleanders in May and June, but as I am ignorant on that subject, perhaps you will kindly tell me if they require much or little?—H. H.

[The dull weather, and, for anything we know to the contrary, the shaded position on the staircase, prevent the buds opening freely. In such a position, and cool withal, the roots should not be dry, but neither should they be deluged with water. If no sun and little heat get at them, the water necessary will not be much. If you could move the plants to the window in the sitting-room, it would, no doubt, cause the buds to swell and open better. The Oleander likes abundance of water when growing in summer, for where it flourishes naturally it is apt to be a marsh plant, from the overflowings of rivers at one time, and to be parched and baked by the sun at another season. The Camellia also will take abundance of water at the time of summer growth, but it must have no parchings or bakings even in the autumn or winter, or the buds would be cast off.]

CULTURE OF HUMEA ELEGANS.

Will you tell me how to grow the Humea elegans, the size spoken of in your No. 35? I have in my small greenhouse a few plants about a foot and a half high. Last year my plants only flowered about a yard high. Will you also let me know if they should be planted out before they are in bloom?—Ada Stephenson.

[Your Humeas this next summer will only be like too many of them now-a-days—mere skeletons, and not worth their keep—that is to say, they will have bare stems a foot to 18 inches long, and about as much of poor feathery tops, like some Humeas you might have seen stuck up in the centre of some flower-beds of late years—enough to banish this most beautiful plant from cultivation. The reason why your Humeas will be such objects is that they are now too old to be done anything with beyond giving them an early shift in the spring. All Humeas require the same treatment as Balsams from the seed-leaf at the end of April to their winter pots at the end of September, when their leaves should be falling over the sides of the pots, long, broad, and succulent. But we shall give their course of culture early in the spring, to be in time for the next sowing.]

Heath in America.—At one of the weekly exhibitions of Massachusetts Horticultural Society last summer, Mr. C. M Hovey presented a fine specimenof Heath, to which was attached a lable stating that it was found growing naturally within twenty miles of Boston. The plant attracted much attention, and gave rise to various remarks—some people being quite incredulous in regard to its being indigenous in this vicinity. Professor Gray, in a communication to the American "Journal of Science and Arts," has spoken in regard to this subject as follows:— "That 'America has no Heaths,' is a botanical aphorism. It is understood, however, that an English surveyor nearly thirty [illegible]und Calluna vulgaris in the interior o[illegible] Newf[illegible]ndlan[illegible] [illegible] it as an inhabitant of that island. But this summer, Mr. Jackson Dawson, a young gardener, has brought us specimens and living plants (both flowering stocks and young seedlings) from Tewksbury, Mass., where the plant occurs rather abundantly over about half an acre of rather boggy ground, along with Andromeda calyculata, Azalea viscosa, Kalmia angustifolia, Gratiola aurea, &c., apparently as much at home as any of these. The station is about half a mile from the State Almshouse. Certainly this is as unlikely a plant, and as unlikely a place for it to have been introduced by man, either designedly or accidentally, as can well be imagined. From the age of the plants, it must have been there for at least a dozen years; indeed, it must have been noticed and recognised, two years ago, by a Scotch farmer of the vicinity, well pleased to place his foot once more on his native Heather."

VINES IN ORCHARD-HOUSES.

I SEE a remark (page 271) in your Number for December 31, "In the meanwhile, as shade is beneficial in hot, clear, sunny weather, there cannot be a more beautiful and at the same time more useful mode of obtaining that shade than by planting the more hardy kinds of Vines for that purpose." I have no hesitation in saying this will be found incorrect, and that all shade is injurious to the Peach in an orchard-house. I do not say a Vine or Vines may not be planted in a house devoted to this mode of culture; but that Peaches and Nectarines shaded will be inferior. No summer will be found too hot, no light too strong to have this fruit in perfection.

The value of orchard-houses is but just beginning to be recognised by those who know most about them; few have been built which will not be wished larger and better. A large house costs less in proportion than a small one, cannot be too long, and, up to 30 feet (which I think the maximum) cannot be too wide. If it stands with one end to the south, the northern half may be planted with Vines, the south end filled with Peaches, &c. In such a house White Muscadine, Black Hamburgh, Chasselas Rose Royale, and other hardy Grapes may be produced in perfection as far north as this without fire heat.

We only want orchard-houses to be moveable to meet the case of those who are tenants, and do not like to build on other persons' property, and they will spring up in numbers all over the country. I have for the last three years been trying to induce my builder to carry out a plan of a moveable house, and I am glad to say he is now building one; so we shall soon see the effect.—J. R. PEARSON, *Chilwell.*

GLAZED WALL FOR A VINERY.

I HAVE erected a vinery, perhaps not on a new plan, but on one seldom adopted. The situation is a brick wall, facing due south: 32 feet is the length, and nearly 10 feet the height. The front of the glass is founded on a simple stone edging (not a wall) of substantial stones, averaging about 1 foot below the surface. On this is laid a memel batten from end to end, in which memel posts are morticed every 6 feet or so, as the chief supports of the roof, which is of good pitch—*i. e.*, the slope is about from 9 feet 6 inches at the back to 6 feet 6 inches in the front, with a length of rafter of less than 4 feet. I thus have room enough inside to work at thinning, pruning, &c. The Vines are planted inside against the wall, at 2 feet apart or thereabouts. I shall have two rods from each, with a run of from 9 feet to 10 feet each. The front foundation being only 1 foot or little more in depth, the roots of the Vines pass underneath. They thus have a choice of inside as well as outside border. I have nothing running up the front glass (6 feet 6 inches high), or on the rafters (4 feet), so that I have no obstruction to light. From this plan I expect to get the whole of the inside border for either forcing Strawberries or any fruit or flowers of dwarf habit, and either in pots or otherwise. I shall be glad of any suggestions or remarks. It seems to me that where a promenade is not wanted, space is economised; for it is well known that where a vinery is built in the ordinary way with the Vines up the rafters, neither the floor of it nor the back wall are of any use. After the Vines have fully covered the house I expect to take twenty bunches at least from each Vine, and have the full use of the floor or border of this vinery just as if I had no Vines in it, for the roots will be in the open garden, in which I make a border 300 square feet. The substratum of the soil is a pure sand at 18 inches depth, and this sand is probably 20 feet deep.—A SUBSCRIBER.

[We have no doubt your plan will answer well enough, but it would not suit in general circumstances where people like to walk through their houses. We presume that, to have your house full, you will fill and empty by the front glass. We have no doubt the Vines will answer, but one rod or stem will be enough in 2 feet. If so thick as you propose we do not know where the side bearing-spurs are to go. Little can be done under Vines when they cover the roof; but we have seen Vines on the back wall and Vines up the roof, and both do well when the Vines were 4½ feet to 5 feet apart, and at all times, except when the Vines are approaching maturity, the floor pretty well covered as well. We are, however, obliged for your plan, which would no doubt suit many that did not care for walking much in a house provided they got a fair amount of fruit out of it. The houses at Trentham are many of them on a similar plan, only much more lofty; and in addition to the fruit at the back there is also a low trellis in front—not so high as to keep the sun from the back wall. We should advise keeping all the front plants in pots; and then, in addition to Strawberries, you may have dwarf plants of Currants, Gooseberries, Apricots, Peaches, Cherries, Plums, &c.]

BORDER REQUIRED BY CLIMBERS.

I AM rather alarmed at a statement in your paper of Dec. 31st, that "no climbers whatever will do in a border 9 inches wide," that being exactly the width of the border against the back of my greenhouse. The climbers in it were planted last summer and apparently flourish. Will you inform me whether your statement applies to a greenhouse; and if so, what is the least width of border in which they will do?—J. R. W.

[No permanent climber whatever will do in a nine-inch border, supposing the whole of the roots are confined to that space. It sometimes happens that the soil next to a made border is better for some climbers than the border itself; in such a case a four-inch-wide border would do. But if the border is as if it were between two walls, and only 9 inches wide, none but summer or temporary climbers—such as Maurandyas and the like, will thrive in it longer than to just establish themselves, and flower once or twice, and then become the prey of all the scales and insects to which the plants are liable. To the query, What is the least width in which climbers would flourish? no one can reply decidedly. It depends entirely on what kinds of climbers the border is for. A border 1 foot wide and 18 inches deep, and not much under 20 feet in length would do for a great number of climbers; and some climbers—as the Passion-Flower, Tacsonias, all the new race of Clematises from Japan, with a few of the old ones, and some others, would do there much better than in a wider border. But what about the under side of such borders? If the roots of greedy climbers, which are very hardy, can run into subsoil, who knows how far they may go? Then, if the border is wide enough to admit room for the growth of the stem at the surface of the soil it is enough. It is bad gardening, however, to allow any but the coarsest climbers to run into a bad bottom soil; that is more than one-half the cause of some climbers never blossoming freely, and why others are so peculiarly liable to the attacks of insects and mildew.]

PRUNING THE PLUM.

IN almost every garden we find the Plum tree trained in the fan-shaped form, and nurserymen invariably prepare their trees for this mode of training; but notwithstanding its general adoption, there are great objections to it for the Plum, the more vertical and central shoots growing with a degree of vigour inconsistent with fruitfulness; and, when laid in at length, being liable to produce but few irregularly-placed spurs. Something may be done to avert this result by carefully bending the points of such shoots before they break. The horizontal mode of training offers the same advantages for this fruit which it does for the Pear and Apple—namely, that all the parts of the tree are more equally balanced by its adoption. As we have described the formation of the tree (under Pear), we need not here advert to it, and for those who would train in the fan-shaped manner, the instructions for the Peach are sufficient.

We have then to explain the mode of bearing, and to detail mer and winter management of a tree, which we will to be already formed upon either plan, although we horizontal ought to be preferred to the fan mode.

ıit of the Plum is produced naturally upon short spurs › two-year, three-year, or older branches. *Fig.* 1 re- a two-year-old branch, in which *a, a, a,* are blossom-

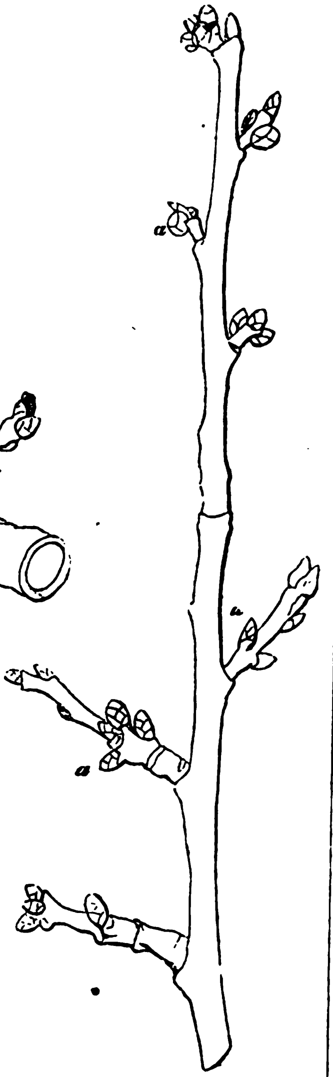


Fig. 1.

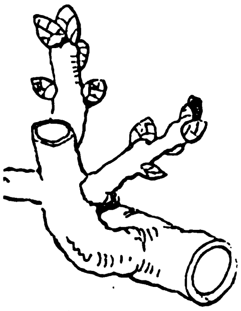


Fig. 2.

ʒ. 2 represents a spur from an older branch, which has eatment in past years from the hand of the pruner. a regular supply of these fruit-bearing studs, or spurs, ep them as close as possible to the main branches, he aim of those who desire to have fruit. As the tree which produces excessively luxuriant shoots ely pruned, we advise the same plan of pinching the hoots, three or four joints in length, as we have ır, instead of cutting them out at midsummer almost ses, and also to stop the leading shoots once or twice wing season, according to circumstances. Trees so l always present a large choice of well-placed fruitful h will afford an opportunity of keeping the spurs ack so as to be close to the wall, or what is understood nacular phraseology as applied to gardening matters, a "at home."

m tree is well adapted for forming pyramids, which le adjuncts to a small garden. Root-pruning is most nd should be frequently resorted to.

THE APRICOT.

It has long been the practice to train this tree in the fan-shaped manner, and to that subject we need not revert. The fruit of the Apricot is produced upon the last year's shoots, and also upon short spurs of the shoots of former years. The latter were more generally encouraged by our older practitioners, but it is now more usual to treat the tree in a similar manner to the Peach. Our object is, therefore, to insure a plentiful supply of young wood (and a succession of it) all over the tree. Great care should be taken to avert the necessity of removing large branches, as it is most susceptible of injury from this cause.

The reason why young wood is preferred to spurs is, that the Apricot tree, not being indigenous, but a native of "the land of the sun," is not only very excitable, but very tender; and, of course, very unsuited to withstand the rigour of our late spring frosts, alternating, as they often do, with the brilliant sunny days which we occasionally get in March. As the blossom-buds of the young shoots, when nailed or tied in, are in close contact with the wall, they are much more secure than those which are borne on projecting spurs: and hence this preference. *Fig.* 3 represents a branch of an Apricot tree, in which A, A, is one-year-old wood, and B two-year-old wood; *a, a,* are blossom-buds, and *b, b,* wood-buds. The summer pruning of Apricot trees consists principally of the disbudding process, removing and thinning the superfluous shoots, and keeping only the well-situated,

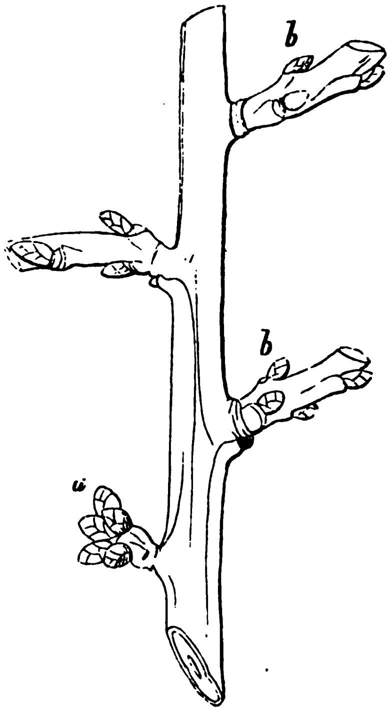


Fig. 4.

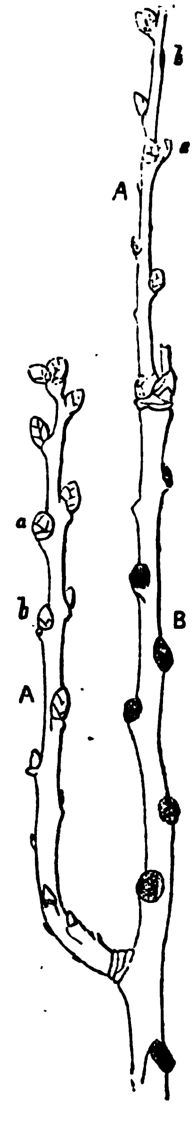


Fig. 3.

replacing shoots at a sufficient distance from each other to permit every leaf which is retained to perform its functions. The young wood must be shortened with discretion, applying the process with less severity to strong than weak shoots, and always taking care to shorten a sufficient number of the lowermost shoots to prevent the occurrence of any blank or nakedness; in fine, to keep the tree "at home."

The Moorpark (the best of Apricots) is very apt to lose its limbs suddenly, and thus many a fine symmetrical tree is spoiled. We opine that the mischief is occasioned by frost, in early spring, bursting the sap vessels. There are some who take a different view of the subject. For the information of those who, after pruning, nursing, and watching their fruit trees for years, meet with this disappointment, we may mention that Mr. Rivers, of Sawbridgeworth, recommends the Gros Rouge, or large red, as "an excellent variety, hardier than the Moorpark."

THE CHERRY.

Fig. 4 represents a two-year-old branch of a Cherry tree, in which *a* is a natural fruit-spur, and *b*, *b*, spurs in process of formation, from the base of the young wood. *Fig.* 5 is a spur also, which has been subjected to pruning. It is thus evident that the fruit is borne upon the two-year-old wood and that of greater age. Fan-shaped training is most in use, and nurserymen generally prepare their trees for this mode. Having shaped the principal branches into a good fan, the art of the pruner has only to deal with the spurs by cutting out the old ones and substituting others at their base, in the kinds known as the Dukes and Hearts; but some of the kinds produce very large foliage, and require the distance between the branches to be greater than usually given.—H. Bailey, *Gardener*, *Nuneham*.

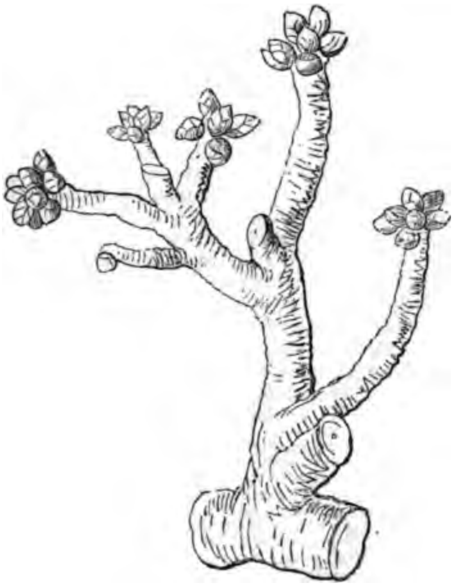


Fig. 5.

A NEW DODGE FOR WINTER-FLOWERING FUCHSIAS.

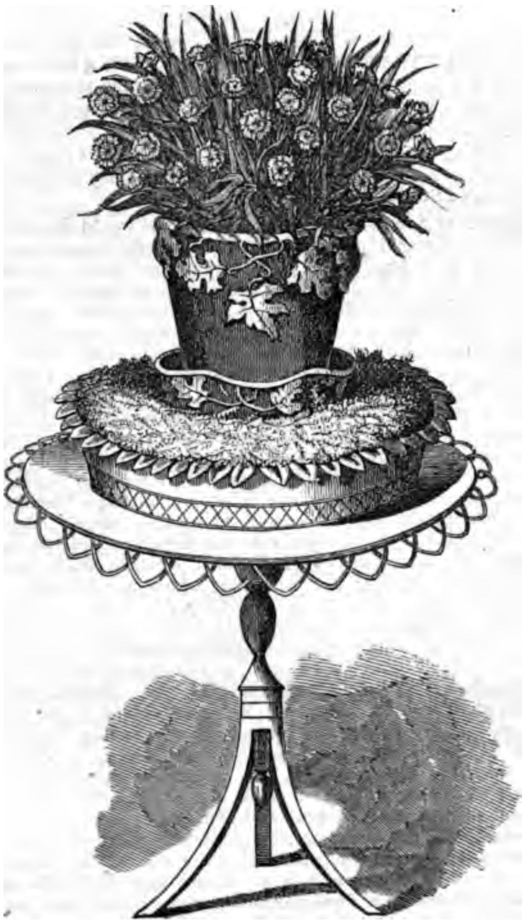
That beautiful winter-flowering Fuchsia that Mr. Beaton mentioned the other week, called Dominiana, which so few people can flower well, is one of the best stocks to graft any of the others on as standards, or for pillars in a conservatory, or to spur-in on the rafters. I have had some flowering all the winter.

Strike it from cuttings, take all the eyes out at the bottom, and pull all the lateral shoots out as they grow. If you do it well it will grow from 6 feet to 10 feet high the first summer, and then graft it the following winter. They grow and flower in the temperature that they would cast all their leaves in on their own roots.—Wm. Smith, *York*.

ORNAMENTAL FLOWER-STAND.

Professor Morren, in "La Belgique Horticole," has given the annexed form of Ornamental Flower-stand, which combines representations of a light iron table, a wire flower-basket, and ornamental Belgian flower-pot of very neat design; and an example of one of the dwarf Pinks of Verviers. We give his description of these articles:—

Ornamental Flower-pots.—These are manufactured by Messrs. Bosch, brothers of Hainaut, Belgium, and are well suited, from their ornamental character, for growing plants in rooms. They are ornamented with chaste designs, in relief, in imitation of different objects, as well as flowers and foliage. The colours which harmonise best with the flowers are blended as well as possible. The pots which are to be preferred from their artistic value, are those which have a cinder grey, or slightly brown colour, with the designs of a light chocolate colour—that is, such as is produced when coffee is well mixed with milk. The figure represents such a pot placed on a bed of Lycopodium. [These pots, we believe, have been introduced to England.]



Wire Flower-baskets.—The trellis makers of Belgium construct the wire baskets with a limb or border of leaves made of tin. The bottom is filled with soil, on a layer of chips of wood, and on this a beautiful green carpet of some of the dwarf Lycopodiums is grown and preserved in a fresh state all the year. When this Lycopod, which is so easily propagated by cuttings, has spread well out, and formed its branches in festoons, the effect is very pleasing. It may be grown thus in a few weeks in a situation which is warm and close, but not much exposed to the rays of the sun. Frequent waterings are necessary. In the middle of a bed of this moss may be placed one of the ornamented pots, containing some well-grown plant.

Iron Table, or Stand.—The under part of the design represents a table made of cast iron, and having an ornamental margin of wire. The article is solid, and, with the other accompaniments, forms a very ornamental object, and is otherwise not unfavourable to the growth of the plants placed on it, so long as the rays of the sun are not permitted to fall on it. This table is slightly and regularly inclined towards the centre, from which a pipe leads down the stock, and having a hole at the bottom for the escape of water. This mechanism permits ample drainage, and the water which falls in the operation of supplying the plants, empties into a vessel placed underneath the tripod. The design of the tables may be greatly varied. Those which are lightest are generally preferred. No parlour or drawing-room should be without such a stand as we have just described.—(*Gardeners' Magazine of Botany.*)

PLANTS FOR COVERING A WALL.

I have a wall facing almost due south, covered with wire trelliswork. It is exposed to a mountain breeze. What plants can you recommend for it? Also, what Roses would be suitable? I do not care for the common climbers, either Ayrshire or evergreen. Which of the Banksias are most likely to blow?—A Constant Subscriber in Ireland.

[The white and the yellow Banksian Roses would do well on your trellised wall if you allow each of them to occupy at least 10 feet of it in length, and had them pruned when they had done flowering, instead of in the winter and spring. The double Macartney Rose would also be at home there, and the three Roses would need a run of 40 feet in length, supposing the height of the trellis to be 12 feet. Then if you cannot afford so much space do not plant the Roses at all. The blue Passion-Flower, and the newer Clematises, as Clematis lanuginosa, the finest of them all; C. venosa, one of great beauty. The old Begonia or Tecoma grandiflora, is still not surpassed by any new hardy climber, where it is properly treated on a south wall.

For the bottom-of-wall plants and for temporary covering, whilst permanent climbers are filling up take the Clematises which run in the way of cœrulea, as cœrulea odorata, azurea, Amelia, and Louisa, Fortune's double-flowering Peaches from China; the new varieties of Cydonia japonica from Paris; Escallonia macrantha; Forsythia viridissima, on west, east, and north walls, the south is too hot for it in a dry climate; Eurybia japonica and illiciifolia, very free, very rare to be seen, very easy to do or undo, and very good bedding plants for the whole month of May. And for summer or temporary climbers take Maurandyas and Lophospermums of kinds; Tropæolums of the hybrids from Lobbianum; Pylogine suavis, a very fast grower, with the looks of a genteel Bryony, having flowers as white as snow, and as fragrant in the gloaming as those of Chimonanthus fragrans itself, but not much bigger than the flowers of the Grape Vine: and for the north side of a house, nothing is more sure to grow and run about, and bloom most abundantly the whole summer, than Calystegia pubescens simplex. Clematis Sieboldi to be planted by the side of the Passion-Flower, and to be trained over it. The flowers of this Clematis are of the looks of a Passion-Flower so much that they might be mistaken at a short distance. Cotoneaster Simmonsi, the best wall plant in the order it belongs to. Chimonanthus fragrans, which ought to be on every house front in the three kingdoms, and on the east and west fronts of some of them also, and also on the north front of every house south of London. Jasminum nudiflorum on the four walls of a house would bloom on some of them from October to April. Ours on the north wall is now one mass of yellow, and has been so since the 1st of November, and will last to the end of February; but the place is well sheltered from the east. Lonicera flexuosa, *alias* japonica, and *alias* Evergreen Honeysuckle, is another which no plant-wall should miss. Ceanothus azureus, the finest of that genus, but the most tender of them all, and requiring some protection in all parts of England, but is amply worthy of as much [illegible] as a Myrtle. Ceanothus [illegible] and [illegible] also [illegible]

[illegible]

[illegible] ...ring a young [illegible] dilating on [illegible] expressing his convicti[illegible] ha[illegible] be considered a fo[illegible] ai[illegible] h[illegible] ...d not help thinkin[illegible] [illegible] grandfathe[illegible] must ha[illegible]

been. Now, without wishing to deny that we live in an age of great progress, I think in some things our ancestors were wiser than we are; at any rate my grandmother at eighty knew how to enjoy an Apple. I think I see her with a small silver scoop enjoying a fine Ribston Pippin by the Christmas fire. But in this age of simulated youth and false teeth, it would not do to eat an indigestible Apple, so many a person but little passed the middle age never eats one.

What a strange thing it is that an Allwise Providence has sent us fruit in the autumn when our bodies from the constant loss of fluid are generally in too alkaline a condition, and that so pleasant a remedy should be neglected! But, with all our boasted reason we are creatures of instinct, and what disagrees with us soon ceases to please. It is not every stomach which can digest an unmasticated Apple. So if we do not take the acids so kindly provided for us, why a fit of English cholera will, perhaps, carry away the superabundant alkali. It is true the stomach may be disordered by unripe fruit, still more easily by fruit in a state of decay; but is that a reason for eating none? I believe the years Asiatic cholera was so prevalent in England were bad fruit seasons; and have heard a medical man say it spared the habitual drinkers of cider. Whether this be true or not, I intend when an old man to set up a scoop and enjoy my Apple when I cannot procure a first-rate Pear.—J. R. Pearson, *Chilwell.*

SUPERPHOSPHATE OF LIME.

I have often been told that superphosphate of lime is a manure the benefit arising from which is perceptible on two or three successive crops. I have noticed this to be the fact on the land of some of my neighbours; but, with me, I have not found that it benefited even the crop which followed my Potatoes. Why is this? I should tell you, that the superphosphate sold to me was nearly entirely soluble in water.—Suffolk.

[The best answer we can give you is in the following extract from a sensible little pamphlet, by Mr. E. Purser, jun., Chemist to the London Manure Company, and entitled "A Few Plain Hints on Artificial Manures, their Theory and Application:"—

"It is well known that bones are slow in their action. The reason for this is, that their most valuable mineral constituent, the phosphate of lime, is in such a state that it does not readily enter into assimilation with the plant. Now, if bones, or any substance containing phosphate of lime, are treated with some strong acid, such as sulphuric, a certain portion of the lime that holds the phosphoric acid is set free, and the remainder rendered soluble in water. On this fact the manufacturer of superphosphate of lime works. He obtains substances containing phosphate of lime, dissolves a certain portion of the lime with acid, and so makes superphosphate. From this it will be argued, that the value of a superphosphate consists in the amount of soluble it contains; and this, so far as it regards superphosphate made from coprolite or apatite, is undoubtedly true. In these substances the phosphoric acid is so closely united with the lime, that, without it is rendered soluble, it lies in the ground inert and is valueless to the farmer. Not so, however, in that made from bone; for in this case the insoluble, consisting of bones, decomposes slowly, and, by the time the soluble is exhausted, comes into action, so not only carries the root on to maturity, but leaves valuable manure in the soil for the succeeding crop. At the present time, farmers are insisting on having a very large amount of soluble. This I do not think is good economy, for the rain must wash a considerable portion of the soluble away, which must either sink down to a greater depth in the ground than the root penetrates, or it must be carried off in the drainage water.

"I consider it better for a farmer either to buy a manure guaranteed to be made entirely from bone, or to go to a respectable manufacturer who is enabled to use a large amount of bone in his superphosphate. It is found, from experience, that a manure containing from 18 per cent. to 20 per cent. soluble, with about 12 per cent. to 14 per cent. insoluble, mostly bone, will give a more satisfactory result than a manure made from coprolite, containing 22 to 24 per cent. soluble.

"Nine-tenths of the superphosphate that is made are used for the cultivation of root crops, their large surface of leaf enabling them to extract nearly sufficient ammonia from the atmosphere for their successful growth."]

MANGLES' VARIEGATED GERANIUM.

It seems because I said that I expected to be able to dress him in a gold-laced coat, everybody is on tiptoe to see him.

Well, whoever should be so fortunate as to see him first would see a sight better worth one hundred guineas than 100,000 of Gazania splendens.

The logic of my argument was, as I had crossed it once it was possible to cross it again. That I failed in part only gives a greater stimulus to further exertion. Mr. Beaton's ideas of preparat[illegible] treat[illegible] speak an old practitioner; but for [illegible] [illegible] will just state what I did

ınd it will be seen to corroborate in part Mr. Beaton's
on the subject.
he first place, mine were all old plants taken up and out-in
; the previous autumn, and are served the same again. In
ıcond, they were planted in dry, warm, gravelly soil.
g a few more than were wanted, they were left in pots.
ng in The Journal of Horticulture, and in notices to
pondents, that this Geranium would not cross with any
ium in cultivation, I thought I would try the truth of that
on, and so began upon the spur of the moment without
eparation, and tried those in the pots first, some under
and some outside, with every Geranium I had about the
for two or three successive days; but the plants in pots
d all my attempts, so I then went to the flower-beds, and
there exactly after the same manner as I had tried on
in pots, and two only taking, and those two were fertilised
the short stamens of Golden Chain. So it will be seen
was not the result of a cross that I looked at so much as
t itself.
at I have advanced upon the results of crossing that Gera-
was an afterthought arising out of that fact.
m inclined still to lay great stress upon heat. I have
l ways in progress and in my mind's eye of attaining the
d end, and if I should be the successful one, I will report

In the meantime the field is open to all who will bring
vits into operation, and as the Yorkshire phrase is (after
them all one knows upon the subject), "it is a daft head
as no ingenuity of its own."
m what I have advanced, Mr. Beaton will be able to
that it was not a premeditated experiment, and that it was
st of the kind, so that I am not in a position to dictate
st way. Did I attempt to do so, it would be theory, which
wanted.
lieve if I were in possession of the original from Mangles'
d (not the green shoots it sometimes sends out, they are
as barren as itself) there would be not the least difficulty
the matter. Is it in cultivation? What is its history?
one can answer those questions I shall feel greatly obliged.
LLIAM SMITH, *York*.

ALLEN'S HOT-WATER APPARATUS.

ALL be obliged if you could inform me whether that part
hot-water apparatus figured by Mr. Allen, at page 134,
XV. of The Cottage Gardener, and placed above the
r containing the feeding-door is made of iron, and if so, is
separately, and how is it fixed? I should also like to
how often it is absolutely necessary to replenish the fire to
t its going out. I presume the boiler does not require
nding with brick.
he event of these inquiries being found impracticable to
wered, would you inform me where such moveable stove
as Mr. Fish describes, at page 270 of the same volume of
Cottage Gardener, are likely to be procured?—G. S.

wish that Mr. Allen would answer the above definitely.
ove is set on brick and with brick surroundings. We
ne the part above the damper, which, in fact, acts as door-
of iron, and cast separately from the rest, and will be
nough if merely set on the top of the boiler, and would
more secure if a screw was placed in it there. Boilers
t feet would require some base to stand on. To do with-
ything of the kind, they must have feet like an iron stove,
is Mr. Riddell's stove, so often advertised, has. There
eral others, as a conical boiler, made by Lynch White,
Ground Street, London, S.; but in all such cases it
be advisable to have the boiler in the house, or so that the
ould be got in, as detailed in the page referred to. Not
st important feature in Mr. Allen's boiler, is the damper,
e small draught given, especially after the fire is lighted.
ould only disappoint our inquirer were we to state how
uch a boiler or any other needs attending to. That will
on the fuel used and the skill of the fireman; and telling
en such fires need attending, without reference to these
and the state of the weather, would do more harm than

TRADE LISTS RECEIVED.

s Carter & Co.'s Gardener's and Farmer's Vade-Mecum, *olborn, London.*—This is one of the very best catalogues of seeds and plants issued by the florists and nurserymen of the three kingdoms. Very few are the purchaseable plants not to be found in its columns, and much is the useful information which it gives about them. It tells their botanical classification, native country, hardiness and duration, colour, height, flowering month, and treatment, though under the last head the information is necessarily brief. It includes lists for the flower garden, kitchen garden, and farm; besides a calendar of monthly operations, and illustrations of some new plants.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Manuring and trenching the ground as fast as the crops are cleared off will still be the principal occupations here. Turn over compost-heaps during frost to be protected from rain and snow, and procure a fresh supply if needed; do not miss the opportunity of forking over previously-trenched ground on frosty mornings. *Cauliflowers*, the plants in frames to be protected from frost; those that are growing in pots to be placed in any cool house from which the frost is excluded. *Horseradish*, make plantations in deeply-trenched and well-manured ground if you would have it fine. *Onions*, sow in a warm corner for early spring use, and plant out small ones of last year's growth for the same purpose, and to bulb for kitchen use; the soil to be light and rich. *Mushrooms*, beds out of doors to be well protected from frost; if the covering is very damp remove it, and replace it with dry. Save horse-droppings for early beds. *Peas* and *Beans*, sow in pots, or boxes, or on strips of turf, a moderate quantity for transplanting; place them where there is a gentle heat, and, when about an inch high, remove them to a cold frame (secure from frost) to harden. The value of a little seed is as nothing compared with the loss of an early crop: and, if the weather proves favourable, these transplanted ones will come in as soon, very often sooner, than those sown at the latter end of the year. *Rhubarb*, continue to take up roots, and plant in pots or boxes for a successional supply; place them in some warm place such as a Mushroom-house at work. *Sea-kale*, see that the fermenting material about it does not get too hot, begin in time and give it a slow gentle heat; cover up in succession, taking care to place pots, or a substitute, over the crowns to keep them from the fermenting matter. *Shallots* and *Garlic*, plant out in dry rich soil, draw a small drill and fill it with wood ashes or charred refuse, and lay the bulbs thereon, but do not cover them: they will, by-and-by, require a slight pressing down. *Spinach*, remove carefully all decayed leaves, and stir the ground the first favourable opportunity. *Salading*, keep a succession sown in pots or boxes, and attend to the protection of Lettuces, Endive, Radishes, &c., in severe weather.

FLOWER GARDEN.

The beds intended for Ranunculuses to be well turned over and thus aired in frosty weather, and, where necessary, renovated with fresh soil or compost. The beds of Tulips to be covered during severe frost, and also from heavy rains, which, at this season, are very prejudicial to them. The Pink and Pansy-beds to be examined, and all plants that are at all loose to be carefully fastened. Sweep lawns occasionally to clear them of fallen bits of branches, &c.; and use the roller here, and on gravel frequently, to secure a fine smooth surface. If any portion of the lawn is unlevel it should be lifted and relaid to give a more pleasing appearance to it, and to make the mowing less tedious and difficult. Avoid wheeling on grass. See that the common Laurel in the shrubberies is confined within due limits.

FRUIT GARDEN.

The pruning of fruit trees should not be delayed till late in the season, the trees suffer when the operation is performed after the sap has risen. If not done in the autumn, prepare and wheel in soil for fruit trees which are to be removed, or for filling up vacancies on the walls: this, however, would have been far better done at the fall of the leaf. See that the drainage of the border is perfect. Stake all newly-planted trees, and mulch them whether in borders or in the open ground. Continue pruning and nailing in favourable weather, and as fast as the trees on the walls are completed, manure the borders and fork it in lightly. The quantity and quality of the manure must depend upon the crops to be taken from the borders. It is never advisable to plant very exhausting crops upon them, but I am aware that in many small gardens it can hardly be avoided: however, it should be confined to the surface as much as possible.

STOVE.

Examine the various tubers and bulbs that are dormant, and see that they are in proper condition, neither suffering from wet nor mouldiness. The principal object at this season should be to keep the plants dormant.

GREENHOUSE AND CONSERVATORY.

See that the foliage of Camellias, Rhododendrons, Oranges, and similar plants are perfectly clean. The contrast produced by the fine large shining leaves of the Camellias with their various blossoms at this season especially enhances the enjoyment to be derived from them. The principal object during the present changeable weather should be to keep damp and mildew in check. Look after insects, especially mealy bug, which if neglected now will be more difficult to extirpate after the plants have commenced their spring growth, and put forth their young and tender leaves. When it is necessary to water the borders of the conservatory choose a fine morning for the purpose, and give sufficient to moisten the soil thoroughly, using lukewarm water; and to guard against damp exhalations for a few days afterwards it is advisable to apply a little fire heat with air, to produce a gentle circulation of the atmosphere, and to expel damp. The plants to be looked over carefully every morning, and every decayed leaf and faded flower to be removed. As soon as the beauty of any pot specimens is over remove them to suitable quarters elsewhere, and supply their places with others in full bloom.

FORCING-PIT.

Keep the temperature, with a moderate supply of moisture, by night at 60°, and let the maximum be 65°. Get in Roses, to keep up a supply. Anne Boleyn and other Pinks may now be successfully forced if they have been potted and prepared for that purpose in good season. Get in, also, Persian and common Lilacs, Azaleas, both the hardy and Chinese kinds, Lily of the Valley, Hyacinths, and other bulbs, Acacia armata, hardy and Nepaul Rhododendrons, Daphnes, Deutzias, &c.

PITS AND FRAMES.

Let the stock of plants in these structures be freely exposed to air during fine weather so as to keep them hardy, and, consequently, less liable to suffer from confinement if a change of weather should render it necessary. Any of the stock from which cuttings are required should be removed to a light warm situation, first clearing off the old and adding a little fresh soil to the surface of the ball. As Verbenas are very liable to mildew when placed in heat at this season, the frequent use of sulphur will be necessary to keep it in check. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

GENERAL routine of previous weeks. Wheeled dung and rubbish-heap on frosty mornings, giving over as soon as the barrow wheels began to lick in the least. Much useless work is often incurred from paying no attention to cleanliness at the rubbish or dung-heap. The ground will get soft there, even on frosty mornings, and the barrow wheels will carry the mark for a considerable distance on the hard ground, and all that would be avoided by sprinkling some long litter close to the barrow-fillers. Dug and trenched up ground on all crusty days, as the work can be done so much more cleanly and expeditiously than when the soil from being clammy, clings alike to spade, forks, and the shoes of the workmen. In kitchen garden trenched and ridged in the usual way, but in the flower-beds, though trenching and bringing up a little of the lower soil, we chiefly leave it at the bottom, and keep the surface to the surface, and what manure f rotten leaves we give, is also placed at and kept near the urface. Looked after slugs among Lettuces at the foot of walls, nd Cauliflowers under glass and in beds; and though I have reat faith in rough surfaces and ashes and lime-sprinkling, and l the rest of it, I always place most dependance on the Weaver" remedy, "Catch them and kill them." Sowed the made up for Carrots. Gave plenty of air to *Asparagus*-bed, comes faster than we want it, and here is a point of a little [illegible]y. W[illegible] like it green before using it, and we like it crisp lso, but i[illegible] [illegible]ch air is given in a rather cold day after it ha[illegible] [illegible] use[illegible] r degree of heat, it wi[illegible] [illegible] to eat hard[illegible] [illegible]

greenness, and in very severe weather when much light cannot be given, greenness may be obtained by keeping the stalks after being cut surrounded with damp moss at their base, and the bulk exposed to the light in a window or hothouse. Sowed near a furnace a few Cucumber seeds, and made up a bed of fermenting leaves to get them in by-and-by. The bed will be just now about 4 feet at back and 3 feet at front, and with leaves alone will do, we trust, for early plants. Transplanted Dwarf Kidney Beans in pots where there was a heat of about 50° to 55°, and sowed more as we shall be applying more heat presently, and nothing is more pleasant to eat than early Beans. We find they are now much more prized than when a supply was kept up all the winter. I am quite sure that the labourer enjoys his first dish in July as much as the nobleman does his at Christmas. Spawned and earthed up small Mushroom-bed, having mixed a good quantity of dry sods to get the material (the dung), into a good condition. Placed some of these sods and a little chopped straw with manure in a shed, in order to cause it to dry sufficiently without heating violently.

FRUIT GARDEN.

Kept pruning as opportunity offered, and preparing for fresh planting that could not be done in autumn. Scrubbed walls with brooms and brushes that are old and soft to get them in good order for whitewashing; for fruit trees began sprinkling Peach-house, now filled with bedding plants, but which will be all removed before the trees approach the blooming state; all the heat given now being just so much as is necessary to keep out frost. Gave early Strawberries that wanted it a little water. Now is a critical time; too much water will rot the flower-bud, too much dryness will shrivel it, and the happy medium must be aimed at. If there is the sign of a worm-heap, the gentleman must be dislodged at once; a little lime in the water will make him uncomfortable, and most likely bring him to the surface. Damped the stem of the Vines in small pit. Heat now about 55°, which just suits the Black Prince Strawberry. Cleared all the leaves off the Figs in Fig-pit, and every fruit bigger than a small Pea. Kept them bearing longer than we ought to have done, as, like most things, they are all the better for a rest. A vinery that showed signs of thrips has just been cleared, the communications with another house securely closed, and a good smoking given to it with *sulphur* being burned in it along with a little sawdust: of course, such treatment will kill each and everything that is green, and should never be resorted to unless the wood is thoroughly hard and well ripened. Such fumes search into every hole and cranny; and, though we fear not successful in destroying eggs of insects thoroughly, it will make pretty sure work of all that are alive. Once, however, on opening a house, so treated in a morning, we found a robin alone in it, even though we found it hardly possible to breathe; he must have got in some snug corner. A pound of sulphur would fumigate a house—say 30 feet by 12 feet, and 10 feet in height, and might be mixed with a couple of pounds of dry sawdust so as to burn slowly. The drier the house is the better. A flower-pot, an old saucepan, or even an old shovel are very good for the operation, getting a few nice embers, placing a little paper and straw on them, then the mixture, and covering all over with moss.

Plants as last week.—R. F.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

MANGOLD WURTZEL WATER (*A Subscriber*).—So far is the water in which Mangold Wurtzel has been boiled from being poisonous, tha[illegible] [illegible] have drunk beer and wine made f[illegible] [illegible] being sliced, boiled [illegible] to [illegible]

ring Phloxes (*J. M.*).—As your ground is very exhausted, there is
tion to mixing with it a little nightsoil, as it is the only manure you
ut we should rely upon watering with very weak liquid manure made
house-sewage, and applied in spring and summer.

aceous Plants (*W. R.*).—We know of no work devoted to the cul-
of herbaceous plants. We began publishing a series of papers
to include all the species and their culture, but we found that
uld occupy too much time and space. However, very shortly we
mmence an epitomised list of such plants, with much useful infor-
about them.

s in Soil about Lapageria rosea (*I. G.*).—Put a handful or two
lime into a pail of water, and let it stand all night, and water the
the clear liquid in the morning. Take away all worms that come
rface. Place a little leaf mould on the surface, and cover with a
slate. This will induce those a little sick to get into it, and next
you may take all away, dressing and worms. If that does not do,
he dose. A few days afterwards push away what soil you can safely
your fingers and a pointed stick, and replace with fresh peat and
hich you have heated over a furnace to kill all worms and their eggs,
osed to the air again before using.

ental Greenhouse Solanums (*I. W.*).—We doubt if any will
r purpose quite as well as capsicastrum. Solanum jasminoides is a
ber, but does not make much show with its fruit. S. melongena
gg Plant; white and purple varieties, which look well when well
S. muricatum produces pretty berry-like fruit. S. Quitoense pro-
e fruit called Quito Oranges. S. laciniatum has pretty foliage, and
what is called the Kangaroo Apple. S. citrullifolium might also
our purpose; but these will show their fruit chiefly in autumn and
and will not keep in winter unless in a good temperature. We
good variety of Capsicums, large, small, cherry-shaped, would suit
ose, and there are various colours.

System of Heating (*An Old Subscriber*).—We can only refer
hat has already appeared in our pages on the subject. Kidd's
as not yet been applied to stove plants as far as we know; therefore
no experience on that branch of it.

d in a Grass Field (*B.*).—The grass should be dug up round each
the surface of the soil kept cleared of grass and weeds, in a circle
diameter. We fear by your asking this question that you have
ug holes and stuck in the trees. Trees will not flourish unless a
ce around them is trenched and made loose to enable the roots to
it freely.

s (*W. Elliott*).—You were quite right in sending your letter direct
fice. We wish for practical papers, for we are overwhelmed with
tal effusions, and are obliged to reject them all. That the Potato
s connected in some way with atmospheric electricity has been
y suggested; but the suggestors have never been able to get over
ulty that electricity has always been in the atmosphere, yet the
of recent occurrence.

y Dung for Strawberries (*Subscriber*).—It is a very powerful
and must be applied sparingly, unless the soil is poor, and not until
g after the blossom-buds are discernible.

ould (*F. A., Birmingham*).—This from a coppice, if not mixed
cious soil, will be as good for potting purposes as leaf mould from
source. Neither lime nor salt must be mixed with it for pot soil.

for Ground Vinery (*Muscat*).—It is best for it to stand north-
outh-west, but north-west and south-east are nearly as good points.

ing Hares and Rabbits (*H. W.*).—There is nothing so good for
g hares and rabbits as trapping and shooting them, and making
omfortable. All appearances of holes should be smeared with tar—
ere the whole of the wire fence daubed with a tar brush at the
would keep them aloof. A two-feet wire fence is not sufficient.
ch a fence, and they, especially hares, popped over it quite com-
This two-feet was fastened to a five-feet fence. The iron bars above
ence were 8 inches apart. We took a strained wire between the
one immediately above the net, and since then we have been little
A number got stunned being caught by the wire as they attempted
The four-inch space above the wire-net and this longitudinal wire
e let them through, but they never attempted it.

g Vines and Figs Together (*Idem*).—To secure a crop of Grapes
ext season from plants now strong, the best plan will be to buy
in the pots, and top-dress them well, and not repot at all. If you
e latter, break the balls a little, use the smallest shift possible, and
earth round the ball very firmly. To make sure of such rods
not shorten them much, but thin out more than half of the
ds. This, of course, is for getting fruit. Were we planting such for
plants in a vinery, we would cut down to a few buds.

RY, BEE, and HOUSEHOLD CHRONICLE.

INATOR OF PRIZES FOR POULTRY.

oultry show has become an established fact, and this
rise to a wish to know, through the medium of your
who the individual was that first offered a prize for
as most assuredly he deserves the thanks of the fancy
great good it has achieved.

several working men in this neighbourhood who,
their skill and care in breeding, &c., have made very
al benefits from it; so much so, that their daily labour
ne quite a secondary consideration with them.

tember last the Keighley Agricultural Society held its
anniversary, and it proved a great success, consider-
ginnings. The poultry show one of its great attrac-
ow, nineteen years ago we began with a poultry show
; the year after we added pigs, and so on. The gentleman that first offered a prize for poultry at this Show was J. G. Sugden, Esq., then of Stretton Hall, now of Eastwood House, Keighley, and his intimate friends said of him at the time that he had taken leave of his senses; was not fit to be at large; and so on; that it would never succeed, and laughed at the idea. But that the suggestion has overcome ignorance and opposition, we have only to refer to Birmingham, the Crystal Palace, &c.

Now, my query is, Do you know, or can you refer to any prize being offered for poultry previous to the year 1842? If so, I would thank you to say where and by whom, as it would settle a dispute in this neighbourhood, and would be to the poultry fancy an interesting fact.—W. Boynes, *Eastwood House.*

[We have records of cock-fights now in our possession more than a century old. The question we have to ask ourselves is whether a fight is a show. If it is, then some of the Africans are much older in the pursuit than we are. We were told by the late General Wemyss that when in military command, he always sent an armed force where there was a cock-fight. It was an old tradition that a man would back his favourite bird by betting his children, his wife, his hut, and at last his own liberty. When several of them thus found themselves slaves, they were apt to be quarrelsome, and the armed force was necessary. In those countries no man can recollect the origin of cock-fighting. As many of our readers will not, perhaps, care to be identified with the pursuit viewed pugnaciously, we will look upon it in its modern and legal light as an exhibition for symmetry of shape and beauty of feather.

The fowls that have been exhibited many years ago are the Moonies and Mosses in Lancashire and Yorkshire, and the Sebright Bantams in and near London. Thirty years ago these latter were shown by Sir John Sebright, Mr. Hollingworth, Mr. Prentice, and others; and since, but before 1842, by Mr. Leigh and others. The points and weights were decided; the latter were 17 ozs. for the cock, and 14 ozs. for the hen. A cock was sold in the early days of these shows for £25. High-class Toy Pigeons were often shown at these meetings; but they were strictly private, and, therefore, little was heard of them. The first poultry shows we know of were held at the Zoological Gardens, Regent's Park. The prizes were very liberal, and the entries were satisfactory, many coming from Ireland; but it was found too troublesome for a prosperous Society. The next prizes we knew of were two given annually by the Earl of Verulam, at the Hertfordshire Agricultural Meeting, for the best two pens of Dorkings that could be produced. We recollect no others till shows became a regular institution.

We have heard of meetings many years ago at private houses, where numbers of gentlemen each brought a bird, and these were put on the table in rotation, and judged according to the rules admitted by every exhibitor to be correct—each one depreciated his neighbour's bird, and lauded his own. One great good that resulted from these meetings was that amateurs exchanged birds for a season for breeding purposes, and that they carefully communicated to each other anything that could advance their common pursuit.]

CREVE CŒUR, ANCONAS, AND CHAMOIS FOWLS—COOKING COCHIN-CHINAS.

In your report of the "extra class" of the Birmingham Show, you mention Crève Cœurs, Anconas, Chamois, and Cuckoos. Now, will you kindly give a description of these fowls, and say if any of them have such sufficient merit that it is likely they will form classes for themselves?

The Crève Cœurs, judging from the description of them, are likely to prove a useful variety; but I hope that Mrs. Blair's description of this fowl is more correct than that she gives of the Hamburghs, which is really absurd, as she says, speaking of Pencilled and Spangled, "all Hamburghs should have clear necks."

Can anything be done with Cochins after they get past a year old, in the way of cooking? I am just in this difficulty. I keep a few Cochins. Suppose I want to sell any—say over a year old, I can only do so to a poulterer, for, perhaps, 1*s.* each, perhaps not so much, and if there is any way of making them eatable, they must be worth a good deal more. This is a great object to fanciers (like myself) of small means, and any information would be conferring a great boon on them.—W. C.

[The only birds among those you name that are likely to fo a class are the Crève Cœurs. The Anconas are very seldom seen, and very little admired. They are birds with small bodies, black and white patchy plumage, enormously large combs and gills, resting on the ground when they eat. They are said to be very good layers. The Chamois are Buff Polands, and sprightly, good-looking birds. Their buff feathers are often faintly edged with white. The Cuckoos are birds of any breed; but Cuckoos in colour—that is, blue, slate-coloured, barred plumage all over. We have had Cuckoo Dorkings, Cochins, and Bantams.

Your Cochins of any age are capable of supplying an excellent meal, or a very choice dish. It is only so long as the idea of cooking is confined to roasting and boiling that old fowls are useless. They may make potted meat, or a most excellent and savoury pie. Every one knows how to make the former, we will give directions for the latter as briefly as possible. Get an earthen vessel of any kind having an earthen lid with a small air-hole, line it all round with slices of bread. Having cut your old Cochin up in pieces, and having collected all the scraps the house affords, a knuckle and some odd pieces of ham, or the lean of some bacon, a dry knuckle and some uninviting scraps of a shoulder of mutton, some stock meat, and a little breast of veal or mutton, take them and go to work, either figuring to yourself a Chinese puzzle, or an old marble chimneypiece, and make layers of the meat, continuing till the vessel is full. Fill in with broth, or gravy if you have it; failing that with water. The only difference is the former makes it rather better. Put on the lid, fasten it down by tying with a piece of string, and place it in a slack oven all night. It will simmer and simmer until all the meat is as tender as butter, and all the water will be turned into jelly. The pie itself will be a sort of mosaic, and the odd scraps that looked anything but tempting when they were put in, will now come out set in jelly, and be as good to the palate as to the eye. *But* if your cook has a weakness for that abomination of all cookery, *a good boil*, you must not expect the success we have promised.]

COLOUR OF A PILE GAME COCK'S LEGS.

WHAT should be the colour, or the most desirable colour, in the legs of a Pile Game cock? Would dark blue legs in an otherwise good bird prevent his taking a prize? The bird weighs little short of 8 lbs. Is that a good weight for a Game cock?—MEDICUS.

[We always fancy that for a Black Red Game fowl the best coloured leg is a willow. It is but a fancy, as we have frequently answered the query in this paper, that any colour is not only admissible but correct. There is only one rule of colour, and that is, that *all* the fowls composing a pen shall have legs of the *same* hue. It is as true of a Pile as of any other colour, but we think a yellow leg looks well on a light Pile. Blue is quite as correct. Eight pounds is an unusual weight for a Game cock. They do not average 6½ lbs.]

WHITEHAVEN POULTRY EXHIBITION.

ON visiting this Exhibition we were much pleased to find so excellent a collection of poultry had been got together so far north as Whitehaven.

The great expense of transit from the southern or even the midland counties of England acted as a prohibition to poultry competing from those important districts; but even with this great drawback to the entries numerically considered, it was somewhat a surprise to find that the immediate locality was represented by a considerable number of pens that would be well able to hold their own at most of our principal meetings. The Committee were evidently a body of gentlemen most anxious to do justice, and act with unvarying courtesy to every one; but the management of a poultry exhibition appeared a somewhat [illegible] task to most of them, and we have little doubt the experience gained at the just-concluded Show, will prove of great value to them on future occasions. One of the principal errors in the arrangements that met our eye at the first glance was, permitting exhibitors (and not a few absolute strangers also), to enter the exhibition-room prior to the poultry being judged at all, and [illegible] thus taking advantage of comparing beforehand [illegible] positions. This feature is quite [illegible] Committee [illegible] might possibly give rise to many unpleasanties, independently of the injury that it must of necessity afterwards cause to the admission funds, for we heard not a few express themselves as "having seen all they wanted to see for nothing." All birds should be received at the doors by persons appointed to that duty; and none others, whatever their pretence for so doing, should be allowed an entrance. The birds were well cared for, and the Refuge School Rooms afford good convenience for a small collection, though if the light could have been more universally diffused throughout the pens it would have been a great improvement. The additional gaslights put up for the occasion causing a rather increased obscurity to the lower pens.

The *Game* fowls were, perhaps, the best classes in the show-room, and there is but little doubt the Brown Reds were the most perfect in condition of any. The winner of the silver cup was of this colour, and it is not frequently a better is met with. We were much pleased also with Mr. Robinson's prize pen of chickens, they were a great credit to Ulverston breeding. In the old birds the same gentleman exhibited a first-rate cock, but mated to a hen with a comb that would disqualify anywhere. Many of the Game fowls, too, did not match in the colour of the legs—always a fatal objection to success. The Duckwinged Game were quite a failure, the first-prize pen excepted. The *Spanish* class throughout showed the locality did not suit them, their condition was decidedly inferior both as regards general health and plumage. The *Dorkings*, contrariwise, were good. In the *Cochins*, the Partridge-coloured richly deserve very favourable mention. The Golden-spangled *Hamburghs* were, undoubtedly, one of the very best classes in the collection. Mr. Jones, of Parton, however, took a sweep of the prizes against a great competition. The other varieties of Hamburghs did not muster so well. Not a single pen of *Polands* was entered. In *Bantams*, the Game, Gold-laced, and some excellent Japanese were well shown.

We hardly expected much in Aylesbury *Ducks*, and our surmise proved correct, but the Rouens were really good.

The collection of *Pigeons* was capital. We can barely call to mind better specimens than the successful Red Tumblers, White Owls, Runts, Barbs, Jacobins, Turbits, or Nuns. Unhappily the weather proved most unpropitious from continuous rain, though even under this disadvantage there was a tolerable attendance.

GAME (Black-breasted and other Reds).—First, H. Miers, Whitehaven. Second, J. Brough, Carlisle. Highly Commended, R. J. Robinson, The Nook, Ulverston.

GAME (Duckwing and other Greys and Blues).—First, R. J. Robinson, Ulverston. (Second withheld).

GAME (any other variety).—First, G. C. Whitwell, Kendal. Second, J. Doney, Aspatria.

SPANISH.—First, I. G. Parke, Moresby. Second, P. Mackay, Moresby. Commended, J. Brown, Aspatria; R. J. Robinson, Ulverston.

DORKING (Coloured).—First, E. Topping, Sandwith. Second, T. Dixon, Rheda. Highly Commended, T. Dixon. Commended, J. Doney, Aspatria; E. Topping; J. Brown, Aspatria.

COCHIN-CHINA (any variety).—First and Second, E. A. Aglionby, Wigton Hall.

HAMBURGH (Golden-spangled).—First and Second, W. G. R. Jones, Parton. Commended, W. B. Clarke, Whitehaven; J. Webster, St. Bees.

HAMBURGH (Silver-spangled).—Second, A. Thompson, Hensingham. (First withheld).

HAMBURGH (any other variety).—First, J. Webster, St. Bees. Second, E. A. Aglionby, Wigton Hall.

GAME BANTAMS.—First, I. G. Parke, Moresby. Second, R. J. Robinson, Ulverston. Highly Commended, R. J. Robinson. Commended, I. G. Parke.

BANTAMS (Gold or Silver-laced).—First, I. G. Parke, Moresby. Second, R. J. Robinson, Ulverston. Commended, J. Brown, Aspatria.

BANTAMS (any other variety).—First and Second, Miss King, Moresby. Highly Commended, J. Newby, Muncaster Head; J. B. Wilson.

DUCKS (Aylesbury).—First, M. Irwin, Whitehaven. Second, I. G. Parke, Moresby.

DUCKS (Rouen).—First, J. Towerson, Whitehaven. Second, E. Weston, Bootle Highly Commended, W. G. R. Jones, Parton.

DUCKS (any other variety).—Prize, J. Towerson, Whitehaven.

PIGEONS.—*Carriers.*—First, J. & W. Towerson, Egremont. Second, H. Miers, jun., Whitehaven. *Tumblers (Almond).*—Prize, R. Pickering. *Tumblers (Baldheaded).*—First, S. Shirwen, Whitehaven. Second, H. Miers, jun. *Tumblers (any other variety).*—First, R. Pickering, Carlisle. Second, J. & W. Towerson. *Pouters.*—First, R. Pickering. Second, J. Weeks. *Fantails.*—First, A. G. Brooke, St. Bees. Second, R. Pickering. *Jacobins.*—First, A. G. Brooke, St. Bees. Second, R. Pickering. Commended, J. Weeks, Bootle. *Trumpeters.*—First, M. Irwin, Whitehaven. Second, S. Sherwen, Whitehaven. *Barbs.*—First and Second, M. Irwin. Highly Commended, M. Irwin. Commended, H. Miers, jun. *Turbits.*—First, R. Pickering. Second, M. Irwin. Highly Commended, J. & W. Towerson, Egremont. *Owls.*—First, J. & W. Towerson. Second, S. Sherwen, Whitehaven. *Any variety not specified before.*—First, M. Irwin. Second, A. G. Brooke. Highly Commended, A. G. Brooke.

RABBITS (lop-eared).—Prize, R. T. Choyce.

GAME COCK.—Silver Cup, A. G. Brooke, St. Bees. Second, R. J. Robinson, Ulverston. Third, [illegible] Brough, Carlisle. Highly Commended, R. Bell, Whitehaven [illegible] Commended, [illegible] Parton. [illegible]—First, R. J.

Robinson. Second, G. C. Whitwell, Kendal. Third. R. Cousins, Irish Street Highly Commended, M. Alsop, Whitehaven. Commended, Mrs. Parker, Coalstaith, Brampton; J, Blenkinsopp, Oughterside.

Dorking Cockerel.—Winner of Sweepstake, J. Brown, Aspatria. Highly Commended, J. Doney, Aspatria; E. Topping, Sandwith Lane End.

Turkeys.—Winner of Sweepstake, E. Weston, Bootle. Commended, I. G. Parke, Moresby.

Goldfinch.—Winner of Sweepstake, R. Bowness, Frizington.

CANARIES.

Yellow Belgian.—First and Second, R. Bell, Whitehaven. *Buff Belgian.*—First and Second, R. Bell. *Yellow Mules.*—First, J. Armstrong, Bridge Street. Carlisle. Second, H. Richardson, Arlecdon. *Buff Mules.*—First, J. Armstrong. Second, H. Richardson. *Piebald* (Yellow or Buff).—First, J. Armstrong. Second, H. Richardson. *Lizards* (Gold or Silver-spangled).—First and Second, R. Bell.

Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, officiated as the Judge.

CROSS-BREDS BETWEEN SILVER-PENCILLED HAMBURGH AND SPANISH FOWLS.

"Worcester's" statement in a recent Number brings to my mind an occurrence of two or three years ago, of which I made a mem. at the time. I was making experiments upon different crosses, and amongst others raised two good broods of chickens from two Silver-pencilled hens and a Spanish cock. These fowls were evidently of a grammatical turn of mind, and wishing to show practically that two negatives make a positive, seven out of eight pullets showed a perfect obstinacy in sitting, and several of them were allowed to rear chickens, and conducted themselves admirably as mothers. There could be no other cross-breeding, as I had no other cock at the time. All these half-bred fowls were black, the cocks with golden and the hens with brownish hackle; both had most extravagant double combs. The eggs were nearly as large as those of the Spanish, but not nearly so abundant as from the Silver-pencilled. I could see no advantage in this cross.

One of the best fowls for table is, I think, the first cross between the Dorking hen and the Game cock.—Nestor, *Malvern.*

NORFOLK AND CAMBRIDGESHIRE TURKEYS.

I wish to commence keeping Turkeys, and should wish to start with the right sort. The Norfolk Turkeys are strongly recommended to me as being the best. I am told by some that the real black are the true Norfolk breed, and by others that they are not. The black ones I find are invariably smaller than the somewhat grey-coloured ones. I thought of buying three hens and one cock bird. I do not want them for exhibition, but for table.—E. W. A. G.

[The Norfolk Turkeys are quite black, and they are not as large as the Cambridgeshire. It has been with them as it will be with all poultry—wherever feather and colour are made a *sine qua non*, other, and in our opinion more valuable, properties must be sacrificed. You can start very well with a cock and three hens.]

THE FATTENING OF RABBITS.

In reply to "A Novice" we insert the following :—

Many ways of fattening Rabbits have been recommended. Nothing answers better than barleymeal, oatmeal, or split peas, or a mixture of these substances, by adding now and then a little tender hay and one or two spoonfuls of water a-day for each Rabbit. The best age at which you can take Rabbits to fatten them is at five or six months; having reached that age they fatten on little, while before that age they could not fatten, they have nothing but skin on their bones in consequence of their growth. The bony system is developed with the cutaneous system at the expense of the other organic systems; and that is the reason why little Rabbits have generally larger stomachs than those of six or seven months. One should not wonder to see them get thin when they are young; one should rather be uneasy if they grew fat, it being an unnatural state, and you would soon see them die of diarrhœa.

Rabbits should be kept at all times in clean airy habitations, and you must pay particular attention to those you fatten. Although much exercise is not good for them at this time, if they were placed for an hour a-day in fine weather on a rich ground, or on a gravelled walk, and given a few vegetables to eat, it would greatly contribute to their health and thriving.

These animals pay in flesh for what they consume; when they have attained five or six months they have generally gained 3 lbs. in four days, and sometimes 9 lbs. in ten days. The older they grow the more flesh, fat, fur, and skin they acquire.

A young Rabbit is not only without much flesh at three or four months, but the flesh is also without taste; at six months its flesh is more firm and better. The older it grows the less tender its flesh becomes; a fortnight is sufficient to make it fat and fit for eating. The young males should be killed before the young females; they become amorous sooner, and their flesh always loses some of its quality.

DUMFRIES AND MAXWELLTOWN ORNITHOLOGICAL SOCIETY.

The third annual exhibition, and competition of Canaries, Poultry, and Pigeons, under the auspices of this Society, took place in the Market Hall, on the 1st and 2nd inst. The Show was open to all Scotland, and, from various causes, was by far the most successful that has yet been held in connection with the Society. No fewer than four silver medals presented by supporters of the Society were offered as prizes, and the Committee having exerted themselves to obtain some standing for the Show as an exhibition of poultry, the result was a display in that department, which, for quality, has never been equalled in the south of Scotland, while the entries were unexpectedly numerous. Of Poultry, 95 pairs were exhibited; of Canaries, 217 cages; and of Pigeons, 28 cages. The poultry coops were ranged in the centre of the Hall; the bird cages round the walls. The Hall resounded, inside and out, with the shrill crowing of cocks and twittering of Canaries, though the incessant noise from the defiant lungs of Chanticleer fairly drowned the cheerful concert of the warbling songsters. But the Show altogether was a most interesting and beautiful one. The exhibition of birds was very much more numerous than any previously held in Dumfries, and the quality better and more equal—the Judges having in most cases some difficulty in coming to their decisions. It would be invidious to particularise where all was good and worthy of the Exhibition; but, undoubtedly, the "King" of the Show in the Canary department was the yellow piebald cock of Mr. Coupland, Dumfries, the winner of Mr. Gibson's silver medal. This bird is of extremely elegant shape, and is valued at £50. His cage was hung with silver medals: he has taken the first prize at a Show in Glasgow, and won the medal at Moffat last year; he also took the first prize at the Lockerby Show; he took the first prize and prize medal at the Dumfries Show last year, and has been equally successful this year. This little paragon attracted many admirers. Among the specimens sent for decoration—that is, not for competition, were two large cages of Canaries shown by Mr. M'Gregor, confectioner, and Mr. Wm. Cowan, Dumfries—the one containing seventeen and the other fourteen birds; also a cage of three Crossbills, belonging to Mr. J. Maxwell, Hillend Mill. These droll but rather clumsy-like creatures were got in Dalswinton wood; they are said to be very numerous about Moffat. Their grotesque movements, incessant motion, and peculiarly shaped bills so well adapted for splitting open at a stroke the fir cones on which they feed, attracted much notice. One of them was evidently flattered by the attention he excited, and perseveringly occupied himself in describing an endless series of somersaults.

Perhaps the greatest attraction in the department of decoration was the large case of the eggs of British and foreign birds, shown by that enthusiastic collector of all kinds of curiosities, Mr. W. G. Gibson, bookseller, Dumfries. This case is only part of Mr. Gibson's collection of eggs, yet it contains 400 distinct varieties, from the minute egg of the Golden-crested Wren to the huge bulk of that of the Ostrich. All the varieties are labelled, are in a fine state of preservation, and arranged with the utmost taste.

In the Poultry department, many of the specimens exhibited were of first-class merit. The *Cochin-China* fowls shown by Mr. Biggar, of Maryholm, were unrivalled for size, symmetry, and beauty of plumage. The prize *Game* cock, the winner of Dr. Grieve's medal, belonging to Mr. James Thorpe, was a model of its kind. Mr. John Pagan, Clarencefield, showed a cock and hen of the Black *Malay* breed, which were universally acknowledged to be truly magnificent specimens. The male bird is of remarkable size, and has quite a regal air, the effect of which is greatly increased by the long and slender arching tail, which is supposed to indicate some departure from the pure Malay breed. The plumage of these birds has a metallic lustre of peculiar beauty. In the same class, the Golden and Silver *Polands*, shown by Mr. W. G. Gibson, were much admired. Among the Poultry shown for decoration were a splendid pair of African hens, belonging to Mr. Biggar, of Maryholm, and a pair of Japanese fowls belonging to Mrs. Brown, Nith House.

The show of *Pigeons* was very good; the prize Fantails belonging to Mr. Kirkpatrick, Duncow, being perfect beauties in their way.

The Hall was on both days continually crowded with visitors, who appeared, from their minute examination and criticism, to enjoy the opportunity afforded them of improving their practical acquaintance with natural history.

A difficulty arose out of the Judges' award for the best Game cock, it being alleged that the bird shown by Mr. Thorpe, and to which Dr. Grieve's silver medal was adjudged, was the property of one of the Judges, though entered in Mr. Thorpe's name. The Committee are making inquiry into the matter.—(*Dumfries Courier.*)

IRREGULAR PRODUCTION OF DRONES.

I have taken considerable interest in the discussion respecting drone-breeding queens, and have had one this autumn which has somewhat resembled those described, and yet differs from them. The circumstances of the case are these: As formerly stated, I used every endeavour to increase my Ligurians by swarming, and had one natural swarm in August, probably near the middle of the month; and the young queen left in the parent hive seemed sterile for about two weeks afterwards. However, I then discovered that she had become fertile. In about fourteen days time I ascertained that the brood were entirely drones, both in the ordinary cells and also in the large cells; and feeling somewhat interested in the result, I paid particular attention to them on emerging from the cell, and could distinguish no difference in their appearance from the ordinary drones. I may also mention that, although they got pretty numerous, the bees did not molest them for several weeks, and I began to think that they must have lost their queen. However, on examination I very soon observed her majesty in a very healthy-looking condition, and also found her to be a very light fine marked Ligurian; and as I had no other Ligurian queen to replace her with, I allowed her to remain where she was; and the result justifies the action, for in due time I began to observe a number of young workers making their appearance along with their larger neighbours, until the scene became quite changed—nearly all young workers with an occasional male. And at the present time I find they are still breeding young bees; but a drone now and then makes its appearance, and I send you one as a specimen, which I caught coming out of the hive this morning (Dec. 15th), evidently for the purpose of taking its first flight. You will perceive that it is not so well marked as the Ligurian drones generally are, and I believe it is much darker than most of those which have been bred by this young queen. However, I have thought better to send it, as the season is now far advanced; and if cold weather should set in I may not have an opportunity of getting another, as they are now scarce. You will perceive that I have merely stated the facts of the case without offering any comment on it. However, it clearly shows that a young queen may first produce only drones and afterwards become a fertile breeder of working bees. If it had not been that there were drones in this hive at the time the queen was reared, I would have considered the occurrence as a provision in Nature to supply that want; but as this was not the case it seems rather unaccountable why it should have occurred. Am I right in supposing that any instance of drone-breeding queens that has come under your notice have never been known to breed anything but them. I should like to have your opinion of this case after examining the specimen sent.—J. S.

[I believe I have a similar case in my apiary, but cannot be sure until mild weather affords better opportunity for examination. I have never kept a true drone-breeding queen for any great length of time, but have no doubt that one of this description would breed nothing but drones during the whole of her life.—A Devonshire Bee-keeper.]

DOES A QUEEN BEE STING OR BITE?— EFFECTS OF INTERBREEDING.

I fancy "Upwards and Onwards" makes a mistake in page 268, and that he took a sharp pinch from the mandibles of the queen bee he was handling for the application of her sting. At any rate, he does not say that she left that weapon behind, which she could scarcely have failed to do if she had darted it into the cuticle of either his thumb or forefinger. The reluctance of the queen bee to use her sting is certainly most remarkable. I must have handled many scores, and never was stung by any. She is, however, by no means so particular about using her jaws, and will bite pretty sharply if provoked to do so by rough usage.

I am also tempted to inquire if he is sure that the bees he speaks of, in the cottager's garden, have really never been crossed, but have "bred in-and-in for years." If this be indeed the case, they must be separated by a distance of several miles from any other bees, since I have proved, and stated in page 39, that drone influence extends fully two miles.

May it not, however, be open to a doubt whether bees do deteriorate, as some have imagined, by being bred in-and-in? I once saw an apiary of nearly forty stocks (and which had numbered as many as eighty), all resulting from a single swarm brought from a distance many years before. Now, this apiary was attached to a lone farmhouse, probably quite as much, and possibly even more, isolated from other bees as the cottager's garden mentioned by "Upwards and Onwards," and no signs of deterioration of the species were to be detected.

I would also refer to pages 221 and 222 of the XXIV. Vol. of The Cottage Gardener, wherein are related the circumstances under which all the bees in Tasmania originally sprung from a single stock. This must, of course, have been a case of undoubted interbreeding without the possibility of its effects being ameliorated by a single cross; and yet, I may confidently appeal to the experience of a no less accurate observer than "B. & W." to state whether I am not correct in asserting that the honey bee of Tasmania is not one whit inferior to its European progenitor. Taking these circumstances into consideration, I believe that "Upwards and Onwards" may dismiss the notion that his neighbour's bees have deteriorated by breeding in-and-in, and may fairly place to the credit of his superior management, any difference in favour of his own bees which he may detect between them and others of their species which may happen to be in charge of a less skilful apiarian.—A Devonshire Bee-keeper.

P.S.—I cannot agree with what is stated at the end of "Upwards and Onwards'" article in page 288, since I have often found swarms which failed to fill their hives the first summer form the strongest stocks in the next.

THE SUPER-POSING DIFFICULTY.

When two such leading contributors as your Devon and Renfrewshire correspondents got completely at variance on a point, not theoretical but altogether practical, it was no wonder that we, the minor on-lookers, should be fairly nonplussed; and it must, therefore, have afforded your apiarian readers much pleasure perusing "B. & W.'s" very satisfactory solution of the difficulty.

"B. & W.'s" remarks are capital, except an unfortunate oversight towards the end, where he says, "I should give to "A. W." this better advice—to follow the northern plan if he wishes his bees to take possession of the upper hive? Why if? Surely your correspondent cannot overlook the fact that to get the bees to ascend was the gist of "A. W.'s" query, and his only motive in uniting his hives, and on which all the disputation hangs. He need not, therefore, apologetically allude to his siding with "A Renfrewshire Bee-keeper," as his mode of reasoning altogether tends to confirm the opinion expressed by that apiarian, more particularly as "A. W." told us at page 410, last volume, that he employs bars and slides. Should that be the case with his lower hive under discussion, from my own experience in uniting these hives, which I have done over and over again with the exact results described by your Renfrew correspondent, I can therefore most unhesitatingly endorse all he has said. Such storified-hives, be they two or many, invariably become one when united, and it is an unquestionable fact that bees winter at the top.

On the other hand, should this particular lower hive have a derance of honey in it, and only these small conical gs in the top we sometimes see, which very possibly your correspondent had in his mind's eye when he wrote, I be prone to entertain the idea, in such a case, the lower become the stock; but I never made the experiment.

e there a large central three or four-inch aperture, the ility of their ascending would be enhanced from the bees lly congregating more between the middle combs.

cribe this diversity of opinion on "A. W.'s" case to the les and practice of storifying not being so well understood south. The high system of farming practised in many s in the north tells most unfavourably against the bee- forcing him to tax his ingenuity to combat this, the urable climate and short season, by combining his swarms storifying plan to effect the same result, that in many es in the south the most negligent bee-keeper easily can ingle swarms and no trouble. The hint of your great porary, of Printing House Square, at the Cattle Show the other day, as to the advantage his southern hearers derive from acquiring a knowledge of the Scotch system qually applicable to apiculture as agriculture.—H. B. D.

HOW I BECAME AN OXFORDSHIRE BEE-KEEPER.

(*Continued from page* 288.)

EN the combs are extricated, place four of the small wedges stant around the bee-board, where the circumference of is points out, and replace the hive upon them; the wedges event crushing the bees, and leave an opening around for tural possessors to return and gorge themselves, and for eighbours also to come and assist at the feast, to clear hive from every, the least, particle of honey, and no housewife could perform a cleaner sweep than the bees f it in that respect; though, poor little things, after they een robbed of everything, I invariably find they have begun g new combs, and elongated some an inch or so in several before nightfall, thus setting us the example that after tunes the most wise plan is to tie on our aprons and go to

Now, take the dish or dishes of honeycomb away a ed yards, the further the better, as the case may be; hem on a greensward if possible, near to some outhouse n where there is a door which can be closed, and within another empty dish or pan is placed. Lift a corner of oth from the dish containing the combs; raise each ely, and brush off any stragglers or those plastered with on to the grass, where their namesakes will soon clear it ff them. Take each comb, after having done so under and close the door upon it; thus the bees are kept from ng on one's after-operations, the first of which must be to ly examine the combs, for centrally in them bee-grubs r less will be found, which, if no notice were taken of hundreds of bees would be lost to the colony. So I t forth a fig-drum, one of those mentioned before which een denuded of its contents, and cut away the comb in s containing the brood so as to fit into it, and press against the sides, that on reversing the super they will in their position similarly to what they would had the tached them there naturally. I then placed it over age 2, the same way as if I was adjusting it for honey working spring, and the bees will hatch out every grub and make the super for next year, by clearing off the remains of adhering to its interior. I thus killed two birds with one got the grubs brought to maturity, and the supers beau- cleaned. The bees will unite the temporary combs to the f the super after their own fashion, but of course they cut out again to become melted into wax anon.

the seals from the surface of the cells, containing the should at once be flayed off with the thin worn carving nd be placed in canvass bags; the pure combs cut and into one, and those pieces containing bee-bread put into r, to be then suspended over basins to drain off the honey uld the weather prove cold or the honey soon thicken, s done this season, suspend the bags somehow near the of the fire, in order to relieve the honey more expedi- from the combs. Under these latter circumstances, I y honey in a tin forcer suspended to a bottle-jack, similar ting meat. Though I am careful to prevent it from becoming so hot as to melt the wax, and every now and then I work the bags about with my hands to alter the position of the combs; but I am careful so to squeeze as not to crush them more than necessary. Happening to have them by me, I have stored my run-honey this year in wide-mouthed bottles, similar to those which are used for preserving green gooseberries, and when it becomes congealed by the cold I shall gently warm the bottles to cause it to run out again when wanted. In the afternoon I took the pan, &c., off from age 1, and loosened the hive from its propolis and the board, and, in the dusk of the evening, spread a cloth on the ground by its side, laid two sticks upon it, placed age 6 upon them, dashed out the bees, and immediately lifted age 1 over them, then winged the bees from the two boards on to the cloth, suspended a pan upon tressels over the hive, and left them roaring out their differences and to settle the affair amongst themselves in the best manner they could.

Why I place the pan upon tressels suspended over the hive is this: When the pan (perhaps I ought to mention that it is now brought into play to ward off treacherous storms whilst one is a-bed and asleep), rests upon the hive, a sensation is created throughout in taking it off, and the bees immediately begin to rush from beneath to find out what is the matter; and be as quick as one will, it takes a degree of time before one can release the pan from one's hands to lift the hive on to its stand, by which time the bees are become thick on the bottom of the hive, and numbers of them would become crushed upon the board, for it will not do to place wedges in this instance, as neighbourly visiting must certainly now be dispensed with. The pan and the tressels can be quietly removed without the bees gaining the least inkling, and their hive is caught up and placed upon the board quick as thought, so as not to endanger one of their lives.

I arose at five o'clock next morning, and placed the hive and united colony upon its pedestal in the manner just described, when I counted about one hundred dead combatants upon the cloth, but no queen was to be found amongst them. I espied her cast out dead from the hive on the morning of the next day. No fighting took place after the bees were placed on their stand. Previously, on the 2nd inst., I cut out the combs and united the two previously united casts of the 20th and 26th of July, to age 1, as I previously said I should; but instead of the 20 lbs. of honey which I anticipated, I had 10 lbs. only, owing to the wet and unfavourable time we experienced during July: therefore, my honey produce this year is 40 lbs., of run honey, and 47¾ lbs. of first quality honeycomb in supers, 87¾ lbs. in all. There was a considerable quantity of bee-brood in the combs of this hive, which I adjusted in a Payne's straw super and placed on age 1, when the pollen-carriers soon gave me to understand what they were intent upon. I could, and I did intend to take age 3, which would now produce me 40 lbs. more of honey; but it is so strong and vigorous, and considering that next season, according to reasonable anticipation, is likely to produce a good sycamore blossom, I shall do as the ladies are allowed to do—change my mind on account of the better prospect.—UPWARDS AND ONWARDS.

(*To be continued.*)

DESTRUCTION OF SMALL BIRDS.

THE following paper was read by Mr. Martin, sen., Reigate to the Reigate Natural History Club:—

The French are great eaters of bread; the supply and the price of that article of diet are, therefore, of great importance to the whole population of the country. The people of Paris itself, it is well known, are especially favoured at the expense of the rest of France, notwithstanding which, at the present moment, there is much grumbling among them.

Their consumption of animal food is much less than in England; and beef and mutton being dear, there is a destruction of small birds constantly going on, which they cook so as to make the most of them for the table. They are not only shot, but caught and trapped in every possible way for food.

The destruction of the small birds has gone on increasing, and in a corresponding ratio has proceeded the increase of those insects and reptiles which prey on the crops of grain and all kinds of vegetable food; and on these insect tribes the small birds live. To that degree of alarm has the public mind been brought, that inquiry and investigation have been instituted, and have demonstrated the fact that the destruction of the beautiful feathered songsters may, if continued, lead to something like positive famine.

In England we do not condescend to eat these beautiful little creatures. We eat no birds of less size than the Pigeon, or the Partridge, or the Snipe, or the Woodcock. But in France, nothing in the shape of a bird, however small, comes amiss to he French.

The translation of the document in question having been printed in the *Times*, it has been reprinted in other newspapers, as also in the *Zoologist*, a periodical which we take in, leading to much discussion in the journals with the view to correct the popular errors which too much prevail in this country as to the influences these useful and beautiful creatures, the birds, exert on other animal and vegetable organisations.

It is an acknowledged truth that in the Divine government the arrangements of the Almighty, in His perfect wisdom, are adapted to maintain an equilibrium among living beings, so that there shall be a due proportion of each in their proper places, not requiring the aid of us poor, fallible creatures, in the fullness of our self-conceit, to adjust the balance.

Although the Sparrows levy a small contribution on the farmer's grain, yet the far greater portion of their food is from injurious insects, and the whole of the food they give their young is from the tribe of insects. At the beginning of the world man would have succumbed in the unequal struggle if God had not given him in the bird a powerful auxiliary, a faithful ally, which wonderfully accomplishes the task which man is incapable of performing—in fact, against his enemies of the insect world man would be powerless without the bird.

If the Sparrows and the Rooks make us pay very moderately for their services, all other birds, the Pigeon excepted, are devourers of insects, and render us gratuitous services. Among them are nocturnal birds, as the Barn Owl, Bats, and others, which ignorance foolishly persecutes. The Woodpecker, the various species of the Swallow, the charming songster of the fields, the Nightingale, Black Caps, Redbreasts, Redstarts, Wagtails, Larks, Wrens, and other small birds, render most invaluable services. As an example of the proceedings of these useful creatures, ten Swallows were killed, and in their stomachs were found the remains of 5·182 insects, giving to each bird 518 insects destroyed; analagous results attend the Hedge Sparrows. With respect to our formidable enemies, the cockchafer and a host of others, the cockchafer deposits from 70 to 100 eggs at a time, which are soon transformed into white grubs, which for two or three years live on the roots of our most valuable vegetables. The weevil produces from 70 to 90 eggs, which, laid in so many grains of corn become larvæ that eat them all up.

"Thus the bird can live without man, but man cannot live without the bird." Common sense and right-minded men would come to the conclusion that man, grateful for the invaluable services of these friends and faithful allies, as small birds, would take them under his special protection; yet man, by a strange blindness and ignorance, is often the greatest enemy of these gentle and beautiful creatures, and as if it was not enough that we should from sheer ignorance carry on this war of extermination, parents allow their boys in their bird-nesting sports to rob the nests of their eggs, and frequently of the young birds—a senseless and useless sport, as usually pursued, and, without spurious or sentimental feeling, we may fairly suppose some pain to the little parents in the bereavement.

We see in domesticated birds the anxious assiduity with which the hens particularly care for and foster their young—how much and with what sedulous care the common hen bird shelters her chickens under her wings. With a similar instinctive affection we may fairly suppose the birds in the hedges feed and cherish their young, and we ought to feel the cruelty inflicted on the poor little creatures by the thoughtless and wilful boy who robs the nest generally from mere wantonness, or to very little purpose. Bird-nesting ought not, therefore, to be tolerated; and the clergy, with the schoolmaster, should be enabled to impart useful and humane knowledge on these subjects of natural history to their pupils.

That these defenceless little creatures have been enabled to survive this grievous warfare is one of the mysteries only to be explained by the wonderful goodness of God, who incessantly redeems and corrects the errors and faults of that fallible [illegible] man.

l the Year Round, a popular periodical, is a facetious [illegible]

—Sir Robert Redbreast, K.G.—*i.e.*, Knight of the Garden, in the chair, by acclamation of wings.

The version of the French document is pleasantly written, and is agreeable in perusal for the general readers, as stating the ravages as respects all vegetable productions by myriads of insects, all endued with prodigious fecundity, and living exclusively on valuable vegetable productions; among them, wheat and other corn plants are destroyed at the root by the grub of the cockchafer and by other vermin; in the grain by the weevil. The cruciferous plants, as the turnips, by other insects; others take up their abode in the pod of beans, peas, and lentils.

At bottom the vital sap is intercepted by underground and burrowing insects. After these, mice and rats expect their share, so that nearly half a crop may be lost but for our friends, the small birds.

Those who have travelled through France, even merely to Paris, must have observed almost all the land are open fields, with few living hedges, and, therefore, affording but little shelter for small birds.

Those who travel at home observe the continual grubbing of hedgerows, and laying small fields together to make large ones, to have more land under the plough, which, considering that we are large importers of grain, can hardly be disapproved, although we must lament the diminution of shelter and protection for our little and invaluable friends, the birds.

In all probability the French government will have stringent measures to restrain the wholesale destruction of small birds. In this country we shall rely on gentle moral reason and suasion to effect the same objects; and in the hope of the entire discontinuance of the "Sparrow clubs," the patrons and promoters of which will be assured that they are making a sad mistake in the destruction of little creatures, which, living partly on grain, repay the gardener and the farmer tenfold by feeding much more on those minute animals, many of them too small to be visible to the human eye without the aid of the microscope, but visible to those quick-sighted birds, as well as the grubs, caterpillars, and all other animalcules which prey on and destroy the products of horticulture and agriculture.

VARIETIES.

Sawdust as a Fixer of Ammonia.—Sawdust is one of the very best absorbents for liquid manure. Mixed with diluted sulphuric acid, it is one of the best materials for the fixing the ammonia which is given off in stables. The following experiments have been put on record:—A shallow basin, in which sawdust, moistened with diluted sulphuric acid, was spread, was hung up in a stable, and, in the course of three weeks, all the acid in the sawdust was completely neutralised by the ammonia in the air of the stable, and a considerable quantity of sulphate of ammonia was formed in this manner. For this reason sawdust mixed with sulphuric acid is recommended as a means of keeping stables sweet and wholesome. The acid should be diluted with forty-five times its bulk of water before it is applied to the sawdust. Just enough should be applied to make the sawdust feel damp. On account of its porosity, sawdust retains the acid very perfectly, and presents a large surface for the absorption of the ammonia.—(*London Review.*)

OUR LETTER BOX.

Trimming Spanish Fowls (*Ignoramus*).—Plucking out the feathers over the eye of a Spanish fowl would not only disqualify the pen, if detected, but subject you to the disgrace of having the fact written on a card and stuck up against the pen. The object of poultry exhibitions is to promote the breeding of fowls having particular required points *naturally*, not by trimming.

Warming a Roost house for Bantams (*C. Thompson*).—We are not friendly to any artificial heat in the way of stoves or hot-water pipes for poultry. We are quite unable to state what degree of cold will kill them, as, although such frosts as we had two years since will spoil combs and freeze toes, yet we never lost one fowl by it. If on a bare spot without shelter, hard frost and east winds will kill poultry; but where they can find shelter, and, above all, where they are well fed, cold will not hurt them. Injury is far more likely to result when they leave a heated place for a cold atmosphere. Any extra warmth should be given by extra feeding.

Guinea Fowls (*A Subscriber*).—One paragraph from our "Poultry Book for the Many," answers both your queries. "They pair: therefore an equal number of each sex must be kept. It is the hen only which utters the peculiar cry of 'Come back.' The note of the cock bird is a kind of wail." You can have the book free by post from our office by sending seven postage stamps with your direction.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	JANUARY 21—27, 1862.	Weather near London in 1861.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
21	Tu	Sun's declin. 19° 54′ s.	30.423–30.376	44–28	S.W.	—	50 af 7	27 af 4	40 11	21	11 37	21
22	W	Gastrolobium acutum.	30.361–30.250	41–32	W.	·01	55 7	29 4	morn.	22	11 53	22
23	Th	Heliotrope.	30 215–30.126	37–27	S.W.	.02	54 7	31 4	3 1	☾	12 9	23
24	F	Hermannia alnifolia. [1858.	30.021–29.988	48–39	S.W.	.01	52 7	33 4	23 2	24	12 24	24
25	S	Conv. St. Paul. Prs. Royal m.	29.890–29.851	53–40	S.W.	.02	51 7	34 4	43 3	25	12 38	25
26	Sun	3 Sunday after Epiphany.	30.288–30.137	55–41	S.W.	.04	50 7	36 4	58 4	26	12 51	26
27	M	Geraniums.	30.199–30.169	56–47	S.W.	.01	49 7	38 4	51 5	27	13 3	27

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 44.0° and 33.7° respectively. The greatest heat, 58°, occurred on the 23rd in 1834; and the lowest cold, 7°, on the 26th in 1838. During the period 129 days were fine, and on 109 rain fell.

THE PROCESS OF FERTILISATION.

SINNINGIA, and not Limmingia (as printed at page 310), was the broken-down family which was the cause and precurser of the present race of Gloxinias. At that time there were only two kinds of Gloxinias in cultivation—the then recently - introduced Gloxinia speciosa, and the oldest of them all, the Gloxinia maculata. Both would seed very freely, each by its own pollen, but neither would unite by the pollen of the other. Both were favourites with gardeners who felt a family-like loss at their want of reciprocity; when one of them, the said gardeners, stepped out of the ranks and turned a rank radical, turned also the genus Sinningia through Sinningia maculata to a botanical figment, united it by its pollen with the newer Gloxinia speciosa which produced glauca or glaucescens, the parent of the present race of garden Gloxinias. It may be stated as an historical fact, that the raiser of glaucescens thought so little of it that he turned out some scores of "roots" of it with the garden rubbish, the rubbish was trampled by cattle, and most of the Gloxinia bulbs were thus destroyed. One plant was kept to prove the cross. Mr. Low, sen., of the firm from Clapton, saw that plant, and picked out some "roots" from the cattle track, sold the first three of them to Messrs. Glenny and Harris, and to Mrs. Lawrence, for 21*s.* each. Just think of that when you have a cross seedling which may not be worth picking up on the street; if it is not a barren one never mind its present looks, give up a florist's notion at once, and call it the progenitor of some prodigious good thing, and the very daring will help to bring your prospects to good account.

Before the first crossed Fuchsia was in the market, in 1836, it was clearly proved, and agreed upon by all practicals who had seen the proofs, that the Mexican species gracilis, virgata, conica, elegans, globosa, and macrostemon, were all convertible, the one for the other, as the merest varieties of garden seedlings—say Asters or Poppies. And not only so, but that excorticata of New Zealand, and discolor of Port Famine, with the wood of which Mr. Darwin had to cook his own meals when on that station, could be produced by the mixtures of Mexican kinds. Even the most dissimilar kind in the family, the Fuchsia arborescens, crossed with some one of the Mexican fry, and produced a weeping Fuchsia, which trailed on the ground like a Strawberry, as I can vouch for, as it appeared among my own seedlings. Two very good chances of two new races had been let slip in Fuchsia.

An entire new race of Fuchsias might yet be had, to bloom exactly as does the common Laurustinus. The second would be less easily obtained, and the primitive moves for finding it are now too far from my mark. Fuchsia fulgens and corymbiflora never well agreed in crossing the species of former days, the foliage was too coarse, and could not be subdued—at least so it was said; but perseverance never tried to prove the question, and if we lost aught by that means, just put it down in the book against the florists' account. One thing the long Fuchsias had done, but ten to one if ever you heard of it to this day—it made dissenters of one-half of the gardeners who knew it, and of every one of the practical crossers. I say practical crossers, for at that time we had many fancy men in the line of crossing; that was a fancy which could do any fancy thing without doing it at all. What they dissented about was the way some botanists said the pollen grains found their way into the heart of the seed-pods, and to all or so many of the yet unfertilised seeds in embryo.

It has been said by learned men, and men more learned believe the thing to this hour, that the pollen has the power to separate itself into minute grains when it is sticking fast as in a pitch-plaster, on the summit of a viscous, or clammy, or sticky stigma, and that these minute grains of pollen go through very small tubes in the style as bullets go into Minnie rifles, or sink down by their own weight through the said tubes, as one might say. From the bottom of the style in flowers, there is a bridge across to the seeds, which they call the placenta, or plain bridge as one might say. How the pollen grains got over the bridge, or got along it, no one could ever tell; but some one certainly said he saw with a glass the pollen grain going down to the end of the bridge, and if he had paid the toll he might just as likely have seen the grain of pollen pass along the bridge and stop at the door of the seed itself till it was admitted. All the men who were practically engaged on crossing found a great difficulty in believing this story. They put the question thus—Do you suppose that by a beat to the tails of a miller's coat which blew the dust on to the side of a tar barrel fresh from the filling, the nearest thing we can think of to liken to the dust of the pollen on to the point of the style, would give the property to the dust to separate itself into distinct grains like small shot in a pouch or belt?

Another version of this wonder was, that each grain of pollen, as it stuck in the clammy juice on the stigma, had the power of forming a tube which reached from the stigma to the ovary, and so impregnated the seeds. In that case the late Mr. Shepherd, of the Liverpool Botanic Garden, had a bulb called Hymenocallis pedalis, in which the style was a foot long, and it had been mentioned as a case of extreme probability that a body so small as a grain of pollen could, from its own bulk, produce a tube of so much length; but that bulb was little known at the time to gardeners, though it had been figured indifferently in the nineteenth volume of the "Botanical Register," plate 1641. It was not till the long-tubed Fuchsias were in cultivation that garden , who were acquainted with crossing, could see the full force of the difficulty which attended those explanations of the means by which the virtue of the pollen reached the ovules. Then, although they could not gainsay it, they would not assent to it; and the sum of their objections was thus expressed—that in all the wonderful contrivances of Almighty wisdom to effect apparently difficult purposes, they had perceived that no unnecessary complication of machinery was used.

The question how the influence of the pollen reaches the ovary is yet in that same position, save and except that most gardeners believe in the mode I once explained in these pages—a mere guess, however—that the pollen grains burst on coming in contact with the gummy fluid on the stigma, and that the contents of the pollen grains, like melted sugar in water, get into the circulation like the rest of the juices of a plant; and seeing that every product of a plant depended on some part or other of the circulation of that plant—the last produced, the vitality of the seed must also depend on a part of the circulation. But whether any of these theories of the way seeds are fertilised be the correct one, no one as far as I know can tell. The probability is, that each party is well satisfied with their own way of explaining the subject, and glad enough to hold aloof from a very difficult problem.

Rare bulbs being so scarce and so little known to the public, it would be of small practical value to enumerate all that is known about their capacity for crossing. Not at present at all events. But there is one more subject connected with crossing which has not yet had the advantage of a public discussion. There are more stages than one in the process of fertilisation, though, hitherto, the work has been spoken of and written about as if the whole process consisted of one event. But the seed-pod is, as it were, the first part to take its own share of the process of crossing. You may fertilise a seed-pod so to speak, and not have a single seed in it, nor the appearance of one; and yet without the crossing, or, at least, the application of pollen, that pod would never have gone on to maturity, but fall off with the falling of the flower. In the second stage of fertilisation you only quicken the lobes or substance of the seed. If it were a Pea it was made for the pot only—there was no quickening of the germ within it. The different sections of Hibiscus, and of Cactus, and some others, are well-known instances to hybridisers of this far-and-no-farther quickening when members of the sections are approached by pollen.

These two stages in the fertilising process are quite common. I told you not long since how I saved 10*s*. clear from a knowledge of that fact. I would not pay down for two seeds of Mangles' Variegated Geranium till I had ascertained if the process of fertilising them was complete or not, and, as it happened, the two first stages of the process had been reached, but that is very rare indeed in the Geranium order, as far as I have had dealings with the members. I have only one more such instance among Geraniums which I can call to mind, and how it happened throws a glimmer on the art of the cross-breeder. I well recollect having had a fine seedling open its first flowers late in October, and although it is foolish work to cross the first flowers of a very young seedling in June, or, say in the best of weather, I could not keep down the ruling passion. I ripened several pods from that cross, but none of the seeds had the germ of life quickened or fertilised, and, of course, they did not sprout.

The old Alströmeria pelegrina will ripen its seed-pod, and some few apparently ripened seeds if you touch it with the pollen of any of its nearest allies; but you, or at least I, could never get a crossed seed from that Alströmeria to sprout. Hookeriana is the next nearest to doing the same; but I believe the whole genus will give more or less evidence of the fact that full fertilisation consists of more than one process [illegible]. Then what you read in books about the po[illegible] swel[illegible] such and such a ti[illegible] the p[illegible] [illegible] those fictions whic[illegible] [illegible] generally [illegible] The lesso[illegible] [illegible] and [illegible] he [illegible] his [illegible]

up; and those which never show the moisture are more safe, one would think, if all the pollen it needs has been collected on the same day, or at the farthest on the morrow.

But, to go still closer to the practice. When you see a chance like this, what do you suppose would have been the result if Mr. Smith, of York, had applied the pollen of the Golden Chain on Mangles' Variegated at eight o'clock in the morning, again about eleven in the forenoon of that day, again after he had his dinner—say two o'clock, and last of all just before he went in to tea? Just think this over in your own mind. Perhaps it was the very bait for the hook to catch some one to our ways of crossing without being cross ourselves. Everybody likes flowers, but none half so much as those who pry into the secrets of nature about their origin and the ways to improve them.

This, the successive stages by which the impregnation of seeds and seed-pods is effected in some plants, has been prominently brought to my recollection by a pamphlet for which I am indebted to the kindness of Mr. Darwin. It is from the "Journal of the Proceedings of the Linnæan Society for 1862," and treats "on the two forms, or dimorphic condition in the species of Primula, and on their remarkable sexual relations." A course of interesting experiments by Mr. Darwin on the "pin-eyed" and "thrum-eyed" kinds of Primulas, and how the reversed position of the style and stamens in these flowers affects the number or the quantity of seeds which they produce.

Referring to Cowslips and Primroses, Mr. Darwin found that "the two forms exist in the wild state in about equal numbers;" also "that the existence of the two forms is very general, if not universal, in the genus Primula." In every case which he tried he found that the "pin-eyed," or long-styled plants, produced a less number, or quantity, of seeds than the "thrum-eyed," or short-style ones. Mr. Darwin thinks "the cause of this difference is, that when the corolla of the long-styled plants falls off, the shorter stamens near the bottom of the tube are necessarily dragged over the stigma, and leave pollen on it; . . . . . whereas, in the short-styled flowers, the stamens are seated at the mouth of the corolla, and in falling off do not brush over the lowly-seated stigma."

This is just the opinion I have been advocating, the less pollen the fewer seeds, or the still fewer number of the stages of fertilisation. Here, then, is where practice and science are brought face to face on equal grounds. The deductions which Mr. Darwin draws from this subject are, like others of his reasoning powers, most profound, and very interesting; but I must here refer the reader to the "Proceedings of the Linnæan Society" aforesaid, and ask the question, Would not the repeated application of the pollen, as above, have the effect of making up the deficiencies in all the cases mentioned both by Mr. Darwin and by Gærtner?

D. BEATON.

ICE-HOUSES, AND THE CONDITIONS NECESSARY FOR KEEPING ICE.

THERE is, perhaps, nothing in the horticultural department on which such a diversity of opinion exists as on the preservation of ice. So diametrically opposite are the views taken on this subject, that the inexperienced public may, naturally enough, feel puzzled which way to reconcile the conflicting opinions given. The difficulties in the matter are these:—An experiment can only be made once a-year, and it sometimes happens, perhaps, to be made under such fortunate or unfortunate circumstances, as to have more influence on the result than the practical operator gives it credit for; and the blame [illegible] credit, whichever it may happen to be, is all absorbed in [illegible] feature or mode of treatment in which the usual course [illegible]-keeping is departed from. Thus, for instance, Mr. A [illegible] his ice in 1852, and finds it keeps better than it did the [illegible] before, forgetting, at the same time, that his ice-house was [illegible] his family several months earlier in 1851 than was [illegible] 1852. Another puts straw around one year with [illegible] and numberless experiments are being made year [illegible] more or less conflicting, so that a few [illegible] treatment ice received in years gone by, as well [illegible] about it at the present day, will, perhaps, [illegible] explain the matter.

[illegible] trace the history of ice-keeping by artificial [illegible] original source, we shall find that large heaps of [illegible]

Certainly the plan was not uncommon about the time
Loudon's Gardeners' Magazine" first made its appear-
1824, and it is only taking a lesson out of Nature's
y adopting that plan. Drifted snow passes over the
of some rocky precipice into some ravine or hollow;
there a greater or less length of time, according to its
y and the situation it is placed in, the climate, and other
ons. Some of these are so favourable, that snow is
reserved a long time in a natural way. Only about six
go, a quantity of snow was taken out of a chalk-pit a
es from here (Kent) towards the end of June, that had
rifted into that position. I have known a north wind
ne snow into the recesses on the southern side of a ridge,
ve seen it lie glittering in the sun for weeks—up to the
y, even in Kent; but it is needless to say it was the
uantity that took the longer time to waste away. And
with heaps artificially made. If we took the trouble to
heap of pure ice of anything like the dimensions of an
ceberg, there is no doubt but it would keep—*i.e.*, a part
ould keep the whole year, or several years, perhaps; but
that iceberg to the size of a haycock, and see how soon
be gone. If it were possible to transport an iceberg
affin's Bay to the Bay of Bengal, there is no doubt but
nense bulk would require a considerable time to melt
hen under a tropical sun; but it would dissolve away
there than it would in the waters of the North Atlantic.
certainly an unquestionable fact, and it teaches us that
rer the temperature is the longer the ice will keep; and
lly from this it may be inferred that the colder the atmo-
in which it is kept in an artificial condition, the better
nger it is likely to keep. This is certainly at variance
e ideas of those who advise out-door ice-stacks, or well-
ed ice-houses to keep it in; but as these observations
de merely to point out the condition ice and snow are
ed for lengthened periods in a natural condition, the
l way may be treated of next.

ng said that out-door stacks of ice were not uncommon
ls of thirty years ago, and the manner of storing ice
a well, called, perhaps correctly enough, an ice-house,
same construction then as many are now, it becomes us
uire what improvement has been effected since that
To this a qualified answer must be given. New ideas
en put forth, tried and exploded. Some time about 1830
s recommended to be put in with the ice, and some
water—and one writer, wishful, perhaps, of attaining a
ame for a novel experiment, insisted on hot water being
But whatever may have been the merits of water I cannot
One thing I felt certain—that salt did no good; and I
d through the gardening periodicals of the time, and
swered to my satisfaction by the late Professor Henslow,
sapproved of salt being used as a preservative to ice,
to increase intensity of cold for a time it was recommend-
This latter idea has been acted upon by confectioners and
from time immemorial. Salting ice at the time of storing
has been, therefore, abandoned in a general way.

came the question of drainage; and if that be not effected
ntly by the natural condition of the ground, all parties
hat ice will not keep in a pool of water, and an efficient
nust be provided.

latterly the subject of ventilating ice-houses has been
upon, especially by our worthy coadjutor Mr. Beaton;
hough I have had a fair share of experience in ice-house-
and management, I confess I should have great reluctance
ing both the top and bottom ventilation Mr. Beaton speaks
his view of the case be right, then the contrivers of those
us apparatuses called refrigerators must be all wrong,
these are made with the express object of excluding air,
t class of them doing so by the most approved mecha-
ethod for attaining that object, and we all know they
ice well. In what way, then, can air be admitted in large
ies into an ice-house, to improve the keeping qualities of
when we are assured by unquestionable evidence that ice
etter in a box when shut out from all communication
e outward atmosphere than when exposed to it? This
I can hardly see in which way the old-fashioned method
ting out the external atmosphere from our ice-houses
fault. True, in some cases ice kept badly in some houses;
from other causes than want of fresh air, and after con-
le alteration, including some mode of ventilation resulting
ice keeping better, it is hardly fair to give the air-hole all the credit of it. But as examples are always preferable to opinion I will record some cases that have come under my own notice.

The first ice-house that I ever had anything to do with was one of a class of which there are, I believe, hundreds in the kingdom—a broad well some 12 feet or more deep, lined with brickwork, and domed over at top, with a doorway near the top on the north side, and a passage 6 feet or 8 feet long leading to it with another outward door, the whole being on the side of a steep hill facing the north and overhung by trees; in fact, it was in a wood. I forget whether there was any drain from it or not, but the rocky nature of the ground would receive any amount of water that would be created by the melted ice. At the time I speak, upwards of thirty years ago, it was customary after the ice-house was filled up late in the winter, to plaster with mortar all the crevices in the inner door, and pile straw against it also, all with the avowed object of keeping out air, and the ice kept well in this house, as well as in that of any I have had anything to do with. I need hardly say that the plastering-up of the door was not attended to every time the house was opened; but when there was a likelihood of its not being likely to be so for some days it was done—the mortar, never hardening, it was much easier done than might be expected. I may also add that straw also was laid upon the ice, and at the time of storing it away straw was placed against the sides. Now, all this was done for the purpose of keeping out air, and it certainly preserved the ice. The plan presents nothing novel in it – in fact, with a very slight variation it is the same as is adopted at the present day, and in the greatest number of places.

I now come to another case that came under my notice, of which, however, I had not so good a chance to see all the operation, but witnessed the result afterwards—an ice-house sunk in the middle of a field, the ground affording but little undulation, and it was not advisable to have much of a mound or anything to denote at a little distance that there was an ice-house there: consequently, the well or whole house was under the surface with a fair covering of earth over the top. In this house the ice kept very badly. Its exposed position was by some attributed as the cause, while others thought it was the effect of deficient drainage, and a drain was put in at a great expense, and still the house did not give satisfaction, and, I believe, has been abandoned. There were many opinions and conjectures about this ice-house, and several remedies in a small way tried. I think leaving the doors partly open was one, but I am not sure of this. Certain it is that none of the means tried effected the desired object, and it has puzzled me since to assign a cause for its not keeping ice. I have seen one quite as fully exposed do it, and in ground apparently differing very little from the one in question. Whether there was any spring that communicated warmth to the brickwork, and thereby melted the ice or not I cannot say. Certainly there was no standing water in the bottom of the ice-well, as I have seen in another place that failed, and was cured by the water being drained off; but in this case the evil lay in something else, and as I have heard of more than one ice-house failing to preserve its contents as it ought to do, it is evident our knowledge of the laws which determine its keeping or otherwise is very imperfect; and I am unwilling to believe that a large influx and efflux of air is what is wanted. On the contrary, I cannot bring myself to the belief that the old plan of excluding it as much as can conveniently be done was wrong, and an example may easily be obtained. Let the best air-tight refrigerator be filled with ice and the lid put down; at the same time let the like quantity of ice of the same description be put into a deal box with numerous holes bored in its sides, top, and bottom to admit the air; place this box and the refrigerator side by side, and if the perforated box keeps the article longest then I acknowledge myself to be wrong.

I cannot see the utility of allowing currents of summer air heated to 70° or more to pass through an ice-house as being likely to effect any other object than cooling that air, and, of course, warming the ice. If ice had been a fermenting or putrefactive body calculated to generate heat or noxious gases, I should say by all means ventilate; but as it is itself cooler than the air which surrounds it, it does not even give off a vapour. Damp there certainly is, and ever will be as long as there is a particle of ice there; and I am not sure but that warming the air of the house by influxes from the outside will increase the damp in the same way as a warm body resting on the cold earth sucks up the moisture by capillary attraction. I cannot see, therefore, in which way mere ventilation can do otherwise than harm.

It is perfectly true that the best-contrived house I have ever seen was far from being air-tight, as that subtle fluid is sure to find its way through most ordinary contrivances in the door-fitting and stuffing way; and the little that gets in that way is sufficient to keep the place sweet and fit to inhale when the door is first opened, there being, as I have stated above, no noxious exhalations from ice alone. If we could command such a current of air as blows in winter across the bleak coasts of Labrador or northern Siberia, I have no doubt but it would improve the keeping qualities of our ice; but when Science furnishes us with such an element, ice-houses may be dispensed with. In the meantime let experiments be made, and let those who have already made them come forward and publish the result. I am far from arrogating to myself as a being infallible, but, on the contrary, I admit being puzzled to account for the bad keeping qualification of more than one ice-house I have come in contact with. The only reasons I could give were far from satisfactory to myself, but there nevertheless may be some truth in the matter. Its illustrations, however, require a somewhat lengthened explanation, which I submit to the opinion of those more capable of giving a just one than I profess to be. It is this:—

We all know that the agent fatal to ice-keeping is heat; and as water and similar liquids become solid when the atmosphere falls below 32°, in like manner they pass again into the liquid form when the temperature is raised above 32°, and, if the heat be continued, the liquid would be converted into a gaseous vapour and pass off as steam. This, however, we need not follow further; only every reader is perhaps not aware that the steam-looking vapour from spring water fresh from the earth during a severe frost is a precisely similar case to the steam from a hot cup of tea in an ordinary room—in both cases the liquid giving off the vapour being warmer than the atmosphere by which it is surrounded, but the latter, being the largest body, eventually cools it down to its own temperature; and the well stream, after running a certain distance, ceases to give off the steam spoken of, the water being cooled down to a condition much nearer that of the atmosphere. Now when the atmosphere and the water are alike in temperature there is no exhalation; and when the air becomes the warmer the water receives heat from it, and river water in summer is much warmer than that of the springs. This may, perhaps, be thought to have no relation to ice-keeping, but it is given to show the effects produced by heat, which is the element we have to deal with; and the natural laws given above are those which exercise their baneful influence in the ice-house. The small body supplying heat to the larger, as in the cases above, its effects are lost, or so unappreciable as not to deserve notice; but where heat is imparted by a large body to a small one, its effects, of course, are more perceptible; and this is the case with ice in an ice-house, as will be shown.

It is well-known generally, that heat is communicated from one object to another by radiation or conduction. An open fire forms a good example of the first of these, and the warmth imparted to one end of a bar of metal when the other end is put into the fire is an example of the second kind. But as all substances are not alike conductors of heat, as, for instance, glass is a poor one compared with most metals, we may, perhaps, find out by a similar line of reasoning why one ice-house keeps ice badly, and another one well by some analagous case; for as we all know the temperature of the earth a few feet below the surface is 15°, or more, higher than that of freezing water, it is reasonable to suppose that the communication between the warmed walls of the ice-house and the ice itself is the cause of the latter melting; but if these walls could be deprived of their warmth, and reduced to a temperature of 34°, or thereabouts, the loss of ice would be much smaller.

Now, how is this to be accomplished? is the next question. [illegible] why it does not speedily fall to 32°, is exactly owing to its continuing to receive heat from behind by conduction; and as all substances are not alike good conductors of heat—glass, for instance, being [illegible] is likely there is the same difference [illegible] th surrounding the brick casing of the [illegible] rial being to a great [illegible] and [illegible] a good keeping ice [illegible] good conduc[illegible] nd, conse[illegible]ly, [illegible]

being all drawn towards the ice-house by its being an open drain or sink, convey thither a never-ending stream of warmth, which, acting on the ice effects its destruction much sooner than if there were no warm-water pipes (for such, in fact, these rivers of spring water really are) pointing towards it. It is not the mere fact of damp that causes this water, but the water being warmer than the ice warms the lining of the ice-house, and thus keeps up a higher temperature than is compatable with its preservation. And I cannot see in which way admitting summer air would be likely to lower this temperature: on the contrary, I think it must make matters worse. Other strata may also act as conductors as well as water, but the continuous motion of the latter, and that in all likelihood pointing in the direction of the ice-well, seem to be the most likely source of communicating heat, even where no visible signs of the spring water manifest themselves in the ice-house; for we suppose the outlet-drain to be in active working order, and the water channels diverging in all directions from the centre of attraction, trickle through the strata behind the brickwork and entering the drain are conveyed away. Perhaps the worst-keeping ice-houses are of this class.

Now, the next question is, What remedy is there for an evil of this kind? The most practical one seems to be to shut off the communication between the brick lining of the ice-house and the ice by another wall having a cavity between, and only united to it by a few ties possessing the least possible conductive power—say a 4½-inch lining of brickwork secured at places about a foot apart, with slips of slate, and allowing a cavity of about 3 inches. This cavity need not be ventilated for any purpose that I can see. There is nothing inside of it to decay; it is not like dry rot attacking a timber floor; and all its duties are to resist the transmission of heat from the earth to the ice-house, and the more stagnant it is the more it is likely to do this. I have, therefore, no hesitation in advising this inner wall or lining to such ice-houses as keep ice badly; and making sure that the drainage is perfect, I cannot bring myself to the belief that ventilation is an item wanted in preserving such an article as ice, which is destroyed by only one element—heat. By adopting all means likely to arrest that agent we are more likely to be successful. Most substances keep the longest time when excluded from the air. Timber embedded in a morass is a more durable article than the same material in a building by very many centuries, and we have all heard of the exhumation of bodies in perfectly fresh condition that have been interred for hundreds of years. Many other examples might be given, but I hope to see the matter taken up by others who have had practical experience on the keeping of ice, as I by no means assert that the hypothesis here put forth is entirely right, as I have seen enough of ice-keeping to learn diffidence in my own conclusions, that I hereby invite others to give us their views on the matter. I may also add, what is more practical, at the same time not more satisfactory, that I have never been successful in forming an ice-heap out of doors: those who have will, perhaps, be kind enough to report the conditions of their case. Mr. Beaton has on more occasions than one explained how he accomplished it, and the more credit is due to him for so keeping ice; but I know of more than one as well as myself who have been unfortunate this way, so that I should like to know the failure as well as the successful results of the somewhat conflicting opinions.—J. Robson.

HEATING BY A HOT-WATER TANK—TAN ON A FLUE—GERANIUM FLOWERS DECAYING.

I have a greenhouse, 12 feet long, 10 feet wide, 6 feet at front, and 10 feet at back. Would a tank, 11½ feet long, and 1 foot wide be sufficient to heat it with?

I am about to make a pit for striking cuttings, the pit will be 6 feet long, and 5 feet wide; the tank will be the same size. How deep should it be to hold the heat for several hours? Would it be safe to put tan on the flue—do you think it would take fire?

I have some Geraniums coming to bloom, and when the flower-stalks get about 3 inches long the bloom damps off. Is it for the want of manure water? if so, what manure water should I use?—J. W. B.

[illegible]nk of the width and length you specify will be sufficient [illegible] deep; it is of no use having it much deeper, for it will [illegible] its heat much longer, the [illegible]most liquid being always [illegible] tank must be depended [illegible]

A tank of that width will not be sufficient for the pit for propagating; but you may double it and then it would do, and have one for bottom and one for top heat. We know nothing of where your flue is to be, but it will not do to put tan on it; it will get so dried if not turned that there would be risks; if you had a foot of stones, &c., between the two it would be different.

A little soot or superphosphate water—say an ounce to the gallon, might help your Geraniums in fine sunny weather. At present we suspect they are suffering from too high a temperature and want of air in this dull weather.]

MOVING AN OLD QUICK HEDGE.

Will old Quick move so as to form a good hedge quicker than new plants? I cut down an old hedge near the ground last spring, and it has, of course, thrown out abundance of new shoots. I am now going to grub this, and I want to form a new hedge. Do you advise me to use this? Can you give me any directions as to the best mode of proceeding?—B.

[Old White Thorns or Quick—say up to twenty or five and twenty years old, will remove and make a better hedge in one-half the time it would take young Quick to grow to be a complete hedge—that is to say, on the supposition that the old Thorns had not been grubbed-up as you mean to do yours, and that the land was well prepared for them. The way to take up old Thorns to make a new hedge with is exactly the same as for taking up Peach trees to renew a border or for potting them. Every fibre of the roots must be saved as carefully as if every one of the plants was worth at the least 20s. Then, according to the size and length of the roots, the trench for planting them in should be made to give them full free room. The trench ought not to be less than 3 feet wide, unless the soil is or has been recently under high cultivation. The bottom of the trench should be loosened—dug, in fact, to the depth of 18 inches; and if the soil is not good it should be spaded out, and the trench filled with the best of the top soil; and if you could give it some very rotten dung, as for Celery in a trench, all the better, and no weed should come within 2 feet of the new hedge for the first three years. Your old plants which you cut last spring, and which are now in "abundance of shoots," are in the best possible condition to remove; but you have not one week to spare in doing the work, and if you do not get it all finished by the middle of February you will lose one year and do hurt to the plants—it is now almost three months behind time.]

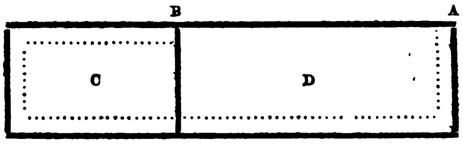
HEATING WITH EARTHENWARE PIPES FOR A FLUE.

I wish to heat a range of glass about 50 feet long, but one-third to be much hotter than the remainder for stove plants or Pines; one fire only to be used. Would clay pipes 10 inches in diameter, or an ordinary flue be the simplest and most effective? If the pipes went along three sides of the hotter part would it be sufficient, and along two sides of the cooler? then the fire being at A, the pipes or flue would follow the dotted line, ending in a chimney at B. Thus going round three sides of C, and two sides of D, how would you recommend that the pipes should be cleaned when foul with soot? I propose to have a brick chamber of 24 inches by 12 inches at every 12 feet, and at the turnings with a metal door at the top, to open when required to sweep the pipes. The pipes to enter at each end of the chamber, but not continue through them. Would this chamber interfere with the draught?

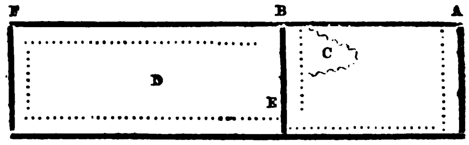
I would also wish to avoid sashes, as the opening and shutting them often shakes the glass, and allows rain to get in and decay the woodwork. I would effect the ventilation by trap-doors at back and front, and as in orchard-houses. My gardener insists that the ventilation cannot be managed without sashes, as air is required from the top.

I have heard that it is difficult to stanch the clay pipes so as to prevent the smoke escaping, but with flanges and fitting one into another, I think this difficulty could be easily overcome. Can you tell me where I should get these pipes, the best and cheapest, and what would be their price per foot?—B. Stevenson.

[We have had considerable difficulty in making out the handwriting, and may not hit upon exactly what you want. So far as we understand, the plan proposed will not work. You propose to divide your house of 50 feet into two departments—a hothouse, C, and a cooler house, D; to have the fire at A, a flue or pipe through D, and round three sides of C, to chimney B.



The flue at D will be the hottest, and you must heat that before you can heat the hothouse, C. Now, that for either Pines or stove plants would often require heat when it would be very unadvisable to have fire heat in the cool division. You ought to be able to heat one independently of the other, and the end where most heat is required should be next the fireplace. Now, keeping in view that you must use one fire, and that at A, it might thus be arranged—the flue could go round three sides of C, to the chimney B, or if much bottom heat was wanted it might take a turn below the bed for that purpose. A close damper at E, would shut off all communication from D, unless when desirable.



The matter would be still more simplified by having the fireplace as well as the chimney at B, and take two flues from the furnace, one for each place. If the one division was merely wanted to be a little hotter than the other, but both to be heated at the same time, then the flue or pipe might run at once from A to a chimney at F. If D was to be kept cool, however, there would not then be heat enough at C for Pine Apples, though by giving much less air at C than D, there could easily be some 10° of difference between them in temperature. If you had heated by hot water your proposed plan would answer well enough, as a flow and return might be enough in D, and you could add what pipes you liked in C.

Your proposed plan of fixing the pipes, by having small hollow pillars of bricks—say 12 feet to 20 feet apart, in which to insert the ends of the pipes—say 9 inches square inside, is what we have often recommended, as, if these are covered with a stout tile on the top, or, as you propose, an iron plate, these can be taken off and the pipes cleaned without disturbing them in their joints, &c. For this purpose soft-burned clay pipes, at least not too hard burned, answer better than those hard-burned, vitrified kinds used for sewage. They are made generally at most tile and pipe yards according to size at so much per yard. There is no difficulty in doing the joints. Good mortar made thick answers well, and so does Portland cement. No such pipes, however, should ever come within 2 yards or 3 yards of the fireplace, but should be joined to it by a brick flue, in a greenhouse—say 6 feet in length, and in a stove 12 feet to 15 feet in length. In fact, for stove heat, we would rather not use them at all, but have a nice flue; and that for a short distance from the flue at any rate, we would build with brick on bed.

From what we gather, we presume your house is to be a lean-to, as you give us neither height nor width; but if a span-roof more heating power will be wanted. For common things, the mode of air-giving in span-roofed orchard-houses will do—that is, giving air at the sides. For such plants as Pines, we should like means of giving air at the apex of the roof, for reasons frequently given. In a lean-to house there must be means of giving air at the top, or near the top, whether you have much heat on or not; but provided there are such means of air-giving it matters not where it is, though for several reasons it would be better to be given by openings near the top of the back wall than by any moving of the sashes. Front air can also be given in the front wall, whether that wall be wood or stone. There is such an advantage as respects economy in fixed roofs having no sashes, but good stout rafter sash-bars, that where openings on the back wall cannot be made, or a double wall-plate cannot be set on, with ventilators pivoted between them, we would swing small ventilators at the top, or have a board to open all the way, which when shut would act as a coping-board to the glass.]

LUCULIA GRATISSIMA CULTURE.

Having seen a very fine plant of this at the gardens of the Right Hon. Lord Farnham, Cavan, Ireland, I thought a few words might be interesting to some of your readers, and as it is considered by most gardeners to be a plant of very difficult culture, which is my reason for giving these few remarks. The one in question is planted in a border in a cold greenhouse and trained to a wooden trellis at the back, occupying a space of 12 feet in height by 8 feet in breadth, literally clothed with fine trusses of flowers to the border. The day I saw it there were 330 trusses of blooms upon it, with 30 fully expanded, each truss measuring fully 7 inches in diameter. Is it a usual thing to bring this plant to so great perfection?—A Subscriber.

[The great secret of having most splendid Luculias is given here. There is no plant in cultivation, and there never was one in cultivation, more beautiful or more gratefully scented than this Luculia, and no plant has ever been more uniformly done for through overkindness. Keep Luculia only two years a few degrees warmer than is natural for it and it wears out. Too much sunlight and 5° in winter over 40° will run it off its beauty in three years, and off the roots in five years. Lapageria rosea and Luculia gratissima should receive the same degrees of light and warmth the year through. Neither of them should ever have more than 40° as the maximum heat the whole winter, and not the smallest attempt at forcing in the spring; and if the glass could be removed from over them in July and August both would do better than they have yet done. Ireland has now thoroughly beaten old England in this instance.]

PLANTING A BED OF ROSES.

I am anxious to plant a bed with Roses; the bed will hold three rows, and fifteen plants in each row. In your Number of July 16, 1861, page 297, I see a list of Roses in shades, given by Mr. D. Beaton; but I can only have three rows instead of four. Now, which of the Roses there named would you recommend, as I have not room for all, and in what order in the rows should they be planted? Would you have the darkest colour in the centre of each row and shade off to the sides, or how?—W. H. M.

[The Roses from which Mr. Beaton had classed the colours in the way the colours tell best in beds or borders were most of them new kinds, and none of us yet can tell the order in which Roses of different degrees of strength and growth ought to stand in beds or rows. All we can do under the circumstances is to show how the planting should be done, if we knew the size each kind of Rose would attain, say, in three years—the utmost period that we allow our Roses to stand without being taken up, root-pruned or not, and replanted for another two or three-year shift. The dark Roses to be in the back row of a border like yours, or in the centre of a bed of any shape. Then, if there is room for only three rows of plants, the nearest to rose colour, or say the colour of the Cabbage Rose, should be in the centre row, and the blush and white Roses in the front row. Again, in a case like yours the strongest grower of the dark Roses should be planted in the centre of the row, and the next strongest right and left of the centre, and so on in gradation to either end. The rows would then seem to "swell" up from both ends to the centre. Again, instead of planting fifteen kinds of dark Roses in the back row, we would plant in pairs of one kind on either side of the centre; the centre plant would then be the key plant to read the arrangement of that row from. The middle row would be on the same principle throughout, the most rose-like Rose in the centre of the row, the next strongest nearest to Rose (cabbage-rose colour) in pairs or singly on each side of the centre, and shading down to each end with lighter and more light shades of rose, and in the centre of the front row would be the strongest grower again, and the best blush Rose [illegible] each side of it a lighter blush; then falling off to either [illegible] shades till you come to pure white. The whole [illegible] the whole of the Rose-growers of Europe could [illegible] your border exactly as it should be from [illegible] and list of colours made last summer, the [illegible] could [illegible] approximate experimen[illegible] the spot would in two years be able to arrange them to the very letter—not, perhaps, with the very same plants, as that might be an impossibility, but surely with but few additional ones. The first Rose in every shade of colour was our choice, the second our next choice, and so on; that is the only key we can give you as to sorts, as we have no more preference for our choice than we should have for that of any Rose-fancier. All such matters of fancy should be free as air in everything which relates to plants.]

THE CAMELLIA AND ITS CULTURE.—No. 2.

Every practical cultivator has his own particular compost for repotting any given species of plants; and all the instructions, either written or verbal, by the most successful cultivators in Great Britain and elsewhere will never be exactly imitated; and it is not necessary that it should be to the very letter. Our views, then, on the mechanical and even the chemical composition of the soil, in so far as a per-centum or two of the prime ingredient is concerned, either one way or the other, are not empirical. We should be inclined to lay considerably more stress on a due observance to its proper physical condition and capacity.

A very good compost consists of two parts of either black, brown, or hazel loam abounding in fibre, one part of sandy peat, and one part of gritty sand. If the compost were subjected to a careful analysis there would be found so many organic and so many inorganic substances—some dozen or fourteen in all, silica, of course, forming by far the most formidable ingredient; others almost from their inappreciable quantity scarcely perceptible and yet necessary towards the well-being of the growing plant, all united together to form one harmonious whole. What an amount of gratification it must afford the practical gardener or farmer to be able to master such analytical tests and all their niceties! As for myself I am but a tyro in these matters, but am learning more and more to know the value of even the rudiments of such a science.

With reference to the loam spoken of, I have gathered it by the wayside, on the slopes of the running brook, and on the knolls of plantations—the higher and drier all the better. In fact, I do not know of a single locality where a very good texture of the above could not be found. From 2 inches to 3 inches is sufficiently thick to cut the turves for potting purposes. The richer in vegetable fibre—not decayed fibre, or humus as chemists call it, but living organic matter—so much the better. If the turves possess that clammy richness which at once indicates a larger proportion of alumina, they must be toned down with opening ingredients in preparing the compost. It may be as well to mention that all composts are more suitable for the well-being of plants if they have been piled up under cover for at least six months previous to using them. This probationary period kills the roots, which if used at once would be a fertile source of annoyance to the cultivator; while at the same time, and, which is of far more consequence, the evaporation of the moisture therefrom mollifies the tenacious or cohesive tendency of the turves, and renders them better fitted to commingle with other ingredients. If this be sound practical doctrine it will at once be obvious to all that the compost, or rather the turves, before broken down to mix with foreign matter, should be well ventilated and protected from rain.

That elastic peat, of which there is abundance all over the country, forming, as it does, in low-lying, undrained, marsh places, is not that ingredient recommended above. Nevertheless such is capable of being reduced to a proper consistency by charring, although by no means an equivalent for the peat which has been formed on the elevated rocks of the Cambrian and Gneiss systems, which are generally all but barren, agriculturally speaking, and yet when gathered and stored into our compost sheds is a prime ingredient for the successful cultivation of Heaths and all New Holland plants, and is of considerable importance to the well-being of the subject in hand.

White rock sand is, probably, the best of its class, as it can be broken down either larger or smaller, as the case may be, according to the size of pot and plant, and its particles are always of a gritty nature and capable of withstanding any amount of fatigue to uphold the physical character of the soil.

The mechanical operation of mixing the ingredients above named is a very simple one, and the potting of the plants thereafter is nearly as simple. It must be borne in mind, however, that [illegible] compost and the operation go far towards successful [illegible]. The soil when mixed should be lumpy, without being excessively so. If it is of the nature recommended above it will be sufficiently fibry to be elastic, and require to be somewhat firmly packed round the edges of the existing ball. If it is, on the contrary, so comminuted as to have little or no elasticity, no amount of care afterwards on the part of the cultivator will ever insure success, which clearly enough elucidates that its reduced power of admitting air, not to speak of other concomitants, is one of the chief causes of sickly subjects. In our own collection I have occasionally observed a sickly patient, and had him thoroughly sounded and reduced, probably from a nine-inch to a five-inch pot, furnishing him with a better diet and ample space for respiratory, absorbent, and digestive purposes, kept him close and under a subdued amount of light, which in course of time had a salutary and convalescent effect.

We would say to the amateur and all those who may take an interest in our dissertation, "Do not allow conventional rules and forms to interfere between you and your sickly Camellias, if perchance there should be any amongst your collections. Get to the roots of them at once as soon as indications of weakness are apparent, whatever time of the season it may be—summer, autumn, winter, spring; shake every particle of soil from the roots; introduce them afterwards into a smallish pot for the size of the plant; for although gallant-looking and gluttonous as they may seem to the uninitiated, they are by no means gross feeders. If they have suffered very much let the compost be considerably more sandy, plunge in mild bottom heat if it can be had, at all events avoid currents of air, syringe overhead occasionally, which will be all the watering necessary for some time to come, and your patient may possibly recruit." Certainly most failures, at least that have come under my own cognisance, are attributable to clogged soil, ending in sour composts—composts that have scarce any organic matter, where water stagnates and refuses to evaporate in the one instance, or percolate through the drainage in the other, and hence causing a sickly and sluggish circulation of sap until, if unremedied, they pine away a miserable existence.

It is, therefore, of infinite importance to see that the various chemical ingredients are so constituted as to insure a healthy physical action, which simply means that in the first place they should be efficiently drained, that the mixture should be so open, the particles so disuniting as to admit a free and rapid passage both to water and air, and that the soil itself should be composed inorganically as well as organically, so as to afford decomposing matter to their roots in their active state of absorption.—JAS. ANDERSON, *Meadow Bank*, *Uddingstone.*

PRUNING FRUIT TREES IN POTS.

A FRIEND of mine, a medical man, being called to attend a person in a high state of fever, directed the nurse, amongst other things, to dip a piece of rag in vinegar, and apply it to the patient's head. Calling the next day, he was unreasonable enough to be very angry because the nurse, fearing to give the man cold, had warmed the vinegar. He had never told her not to warm it, and she thought it very hard to be scolded and called a stupid old fool. What a valuable work that will be on gardening which, in addition to plain directions for everything, shall guard against every possible mistake, and shall say on all occasions, "Now, don't warm the vinegar."

Some time since I sent a lot of beautiful Peaches and Nectarines in pots, full of blossom-buds, to a gentleman, and his gardener cut off pretty nearly all the branches. It was very unreasonable of me to be angry; so, for fear anybody should require to be told not to warm the vinegar, I will next time I write on orchard-house subjects say, that a fruit tree in a pot wants little or no cutting. If the end of the branch is removed there is, perhaps, no wood-bud left; so let it put out, and stop the shoots when they have made a few leaves.

Talking of cutting, how trees would cry out against some gardeners if they had the power. Did you ever see a fine-trained wall tree leave a nursery that was not cut almost to pieces when replanted? I have, but not often. How astonished an intelligent tree would be to find an extra price had been paid for the pleasure of cutting him up. I have heard my father tell of a fine Bess Pool Apple tree that had often borne from twenty-five to thirty bushels of fruit in a season. A new gardener came to the place, caught sight of the tree, and exclaimed, "What a fool Brown must be not to have trimmed that tree; but I will let daylight into it." A saw was procured, some large limbs taken off close to the bole, and the new gardener walked away well satisfied with his work. The next year the tree made a great deal of young wood, and never remembered to bear again till it began to decay where the large branches had been cut off, and it was in a few years cut down. It gives me a shudder to see a knife in some people's hands. Capt. Lawton, in Cooper's tale of the "Spy," had not a greater horror of a saw.—J. R. PEARSON, *Chilwell.*

AN ECONOMICAL RUSTIC ICE-PRESERVE.

WITH the two excellent articles from the efficient pen of Mr. Beaton so recently before us, the same so scientific and practical upon ice-houses and ice-keeping in general, it may seem superfluous to add more to the same subject was it not, as I intend this to be, a practical abstract upon the same or similar ideas. I think, from possibly a fallacious notion, many with less means at disposal than many of our wealthy aristocratic and mercantile millionaires entirely reject the idea of ice-keeping during summer from a supposition that it entails a prodigious amount of expenditure. Now, my chief object in writing this article is to combat this idea, and endeavour to explain how a block of ice might be prepared and kept at a very trifling tax in a pecuniary point of view. To abandon generalising I will endeavour, as an unanonymous correspondent, to explain how to construct my rustic ice-preserve.

Select a spot, if possible under trees, and upon the base of an abrupt slope in the ground falling some four yards in ten. The object in the selection of this peculiarity in the ground is bifold—you insure a natural drainage from the fact of the ground being lower, upon finding its own level, than the table land you make, upon which to pack your ice. This essential level should be raised by pecking out a piece of the bank, or, better, made up with waste stones. Again, in this way, independent of the natural drainage, you easily form an effective water-and-air drain from beneath the centre of the ice, through waste stones, to the level below. You perceive, I would elevate rather than sink; and this, for better preservation, I might triple. The advantage of this slope—if approachable, which it should be, is that you may tip your load from the level above, and it will slide down into its bed at once without any manual labour whatever—a very essential object when you want to secure all the hands possible for loading, carting, breaking, with many etceteras in the usual *modus operandi.*

The size of this tenement of an offspring of winter depends entirely upon the quantity desirable to be preserved, excepting in one material point—namely, thirty fair-sized loads are the minimum in quantity I could advise any one to start with. The combined influence of eighty loads has its preserving powers quintupled in comparison with my smaller quotation.

Well, presuming we have the bed, drain, &c., prepared, our next two heads are protection from wet, and wherewith to neutralise the air.

The means to so neutralise the air. To filter it is equally applicable—an expression possibly unrivalled in singularity this year. Yet why may not the moisture from one of those close muggy days, which wastes 50 per cent. more ice than the hottest week in summer as it penetrates to your ice, be detached? I will but explain the simplest modes, with the more economical way, wherewith to place this straw, the desideratum being to form a wall of the same some 2 feet wide. If the quantity to be preserved is from thirty to forty loads, as above, four posts should be plunged perpendicularly into the ground, for the double object of forming the place, and more particularly supporting the thatched roof. They should be so placed as to form an interior of 9 feet square; the height of the same should be 9 feet also. Not to trespass upon this interior, a row of hurdles should be placed round the three ends, to be enclosed, stood on end, properly supported. Two feet from these outside, should be placed another row of hurdles in precisely a similar way. Between these place the straw, and behind it any old thatch will do; it must be well trodden and rammed down. The thatch should be placed beyond this that it may not become wet. A vacancy of at least 1 foot of open space all round between the aforesaid thatch and the top of this straw wall should be left, to admit of a draught passing right over the mass.

At last we come to the filling. If, as above, you tip it from the cart direct into its bed I consider it is preferable to have the first layer placed in the way you would flooring tiles. Indeed, I have a great leaning for quite a fresh way of housing ice—namely, packing the whole of it in this way layer after layer. Presuming you could command such an unheard-of thing as an ice-crusher, with which to break the ice small as candied sugar, after each layer to throw a barrowful on, and sweep it into the crevices; to be proved if the little extra time would not be amply compensated for.

The mode of housing has received such efficient elucidation by abler pens than mine in this Journal to need no further comment by me. I will refer to two great destructives used by some to assist in breaking the ice, or, rather, melting the same—namely, hot water and salt, the former more especially in severe frosty weather I believe is advantageous. Of the latter's merits, theorising places many objections to it in my mind; for I fear it will always have when thrown a moistening power, more especially when thrown among so active an agent as the subject of my remarks. If possible, after the first slight or partly effective thaw, the place should, if the weather proved frosty, be thrown right open. When the weather again breaks, to be effectively covered over with at least 2 feet of straw; the best of wheat straw being placed immediately over it. I filled a similar place to this with sixty-five loads on boxing-day, 1859, and with the use of three or four wheelbarrows per week, with an unprecedented hot summer, supplied the last of the same to ice the noble vintage wines consumed in the establishment on New Year's-eve, 1862. This from choice only, as we have an excellent ice-house, the child of past-conceived ideas, upon the rusty-hinged door of which, so illustrative of its usefulness, by a rustic typographer, is the following—

> "Last filled in '57;
> The same a useless job has proven."

Would that it were a little nearer home it would make a very excellent potato-house.—W. Earley, *Digswell.*

GROWING MANGOLD WURTZEL SEEDS.

Some years since I was talking to one of our best growers of Mangold Wurtzel (C. Paget, Esq., of Ruddington), when he made the remark, "I wish the seed-growers would sell Mangold seed which would not produce runners." I argued it was not their fault, as they could not save seed from runners as he appeared to think—at any rate, not in this country, as it would not ripen. Experience has led me to alter this opinion, not that I think the evil is caused by saving seed from runners, but by setting late-sown plants for seed. Having selected large fully-developed roots of a new kind for many years I have found the tendency to produce runners lessened each season, till last summer there were only about a dozen in six acres; and I have heard the remark made by a good Lincolnshire farmer that a new variety always produced less runners than an old one. How is this? It appears simple enough to me now. The Mangold is a biennial; it is its nature to grow one season, and produce seed the next.

A good crop of well-grown Mangold is here worth £20 to £30 per acre—a large sum to risk in addition to all the expenses of a second year, and that to produce so uncertain a crop as Mangold seed which in a wet summer may never come to perfection. The growers, therefore, sow seed in August, and plant the roots (then about as thick as one's finger) in the autumn. If well covered with earth these are safe in an ordinary winter, and will produce as much or more seed than large roots the following year. Is not this making the Mangold almost an annual? And is it a matter of surprise it should show a tendency to go to seed when resown? Let seed-growers produce a good article, charge a fair price, and the farmer would be the person most benefited.—J. R. Pearson, *Chilwell.*

Supply of Ice in Paris.—Since the frost has set in with such constancy in Paris more than 1,000,000 kilogrammes of ice have been removed from the lakes in the Bois de Boulogne, and deposited in ice-houses established by the Municipal Council of Paris. Previous to the foundation of these ice-houses, the supply of ice requisite for the population of Paris was monopolised by [illegible] companies, one of whom collected their ice at St. [illegible] illy, and the other at Villeneuve l'Etang. The [illegible] ice in Paris amounts to 6,000,000 kilogrammes [illegible] sold [illegible] 10c., [illegible] the kilogramme [illegible] kilogramme, according to the heat of the weather. The object of the Municipal Council in establishing their ice-houses was to prevent the monopolists from increasing the wholesale price of ice, and to diminish the retail price by selling it at 12c. the kilogramme. Each kilogramme of ice pays a duty of 6c. on entering Paris: the city, consequently, gains 6c. on every kilogramme of ice consumed in Paris, and the greater the consumption the greater the addition of the revenue of the city. The duty on the 5,000,000 kilogrammes annually supplied from the municipal ice-houses amounts to 300,000f. The ice-houses established by the Municipal Council are situated in that part of the Bois de Boulogne comprised between the fortifications and the Auteuil Railway, not far from the lakes of Passy. The excavation for the formation of the ice-houses is 70 yards long, 30 wide, and 15 deep. This immense area of 72,550 yards is divided into ten chambers, capable of containing each 1,000,000 kilogrammes of ice; but, as the waste is estimated at 50 per cent., the ten chambers supply but 5,000,000 kilogrammes. These chambers are vaulted, and are covered with earth to a depth of 4 feet. Large storehouses are erected over the earth to prevent rain from penetrating into the ice-houses. The ice is conveyed to Paris in baskets containing 30 kilogrammes, so that 25 kilogrammes may be found on delivery, the waste on the journey being estimated at one-sixth.—(*Times.*)

CULTURE OF YUCCAS.

A Very Old Subscriber would be thankful for a few directions respecting the treatment of Yuccas. Two were given to her three years ago. One bloomed finely the summer before last and died. A small plant has since come up near where it grew. What should be done with it? The other bloomed last summer and still lives. Three or four suckers have come up round the old plant. Should they not be removed?

[The sucker rising from the roots of the dead Yucca will make a better plant than the parent one. Let it be as it is, unless you could give it some good surface soil, and then mulch it, more for the purpose of encouraging the roots to come near the surface than to hold in moisture. All Yuccas send wiry, long roots down no one knows how far, till at last down goes the plant itself, and it is discovered the cause was from the roots getting into cold soil without drainage. Then, as precautionary measures, gardeners make very good surface soils for their Yuccas, and mulch the plants while they are young. They also choose the driest situations for them, and never trench or dig the ground for them so deep as they do for any other plant. The way they do with the suckers is to leave them on a year or two, or more, or only one year, according to the size, then taking them off very carefully, with or without roots, as it happens, at the end of April; they then stick them in any light soil to root in for a year or two, then up with them and plant them out for good in some upland place.]

CUTTING DOWN OLD LEAFLESS HOLLIES.

My Hollies stand exactly in the same predicament as "An Old Subscriber" describes at page 257. That the frost of the last dreadful winter was the cause there is not a doubt, as all our Hollies and Laurels, Bay, as well as Portugal, wherever situated, and even common Ivy, have all shared a like fate. As every rule has at least one exception, so with the Hollies. Some twenty years ago, the old Limes of our avenue were necessarily thinned by the removal of every alternate tree, and evergreens planted in their stead. Now it so happened that one of these, a common Holly, never lost a leaf, while its nearest neighbour (only a Lime between) of the same sort and size, and sheltered exactly alike with every common and variegated one about the place, did not retain a single one. How can this be accounted for? and would it avail propagating off this hero, the best time, and how?

There are two Hollies in particular as to whose condition I would especially solicit your valuable advice. They occupy the points of two flower-beds before the house, are forty years old variegated, one golden, the other silver (hedgehog variety), and being handsome pyramids I should regret very much to lose them. Till last winter they were very healthy. The leaves [illegible] dropped off in the spring, and there was no appearance of [illegible] till midsummer, when there appeared little shoots from the main stems and branches, the twigs completely dead. It is my intention to cut back all the branches to the main stem, with the hope of their yet recovering, and postponed this operation till spring, thinking, that if the young shoots were exposed this winter before being hardened, they too would perish. Would you kindly say if this plan would have a prospect of success, or should I cut them down to the surface? In that case I suppose I should select the strongest shoot, and remove the rest the first season. Can you also inform me if the wood of those frost-killed Hollies would be equally serviceable for every purpose with those cut down in the ordinary manner? —A Modern Subscriber.

[There is no remedy so sure for frosted Hollies as cutting them down entirely to the surface of the ground; that is to say, when the trees have been entirely frosted and seemed dead for a while, and then sprouted also on the bark. If they were very large trees we would give them two years' chance, and if they got sufficiently clothed, good; if not, no remedy will do. We have never known a single instance during forty years where a Holly got crippled from any cause, and more especially from frost, that it recovered itself like most other trees; and we are quite sure no tree recovers faster from being started afresh and kept to one leader after the old head was gone.]

A FEW DAYS IN IRELAND.—No. 11.

(*Continued from page* 312.)

KNOCKMAROON LODGE.

This picturesque spot, the residence of Gilbert Burns, Esq., is situated on a steep bank of the Liffey, not far from the Knockmaroon Gate of the Phœnix Park. Immediately outside of that gate three roads diverge, one leading to the small village of Chapelroid, some five hundred yards distant, one to Castlenock, and the third going to the pretty little town of Lucan, with the celebrated steep slopes of Strawberry-beds on the right and the Liffey on the left.

Fig. 1 will give an idea of the position of these beds, which occupy a space of about sixty acres Irish, and more than ninety statute acres, and are looked upon as a kind of Dublin institution. These banks are divided into holdings of from two to six acres. Mr. Pressley, the able gardener of Knockmaroon, informed us that the kind of Strawberry chiefly cultivated is called the Chinese—a rather inferior pale colourless kind, but which still brings remunerative prices in the market. Many of the best varieties have been tried on these slopes, but without much success. Many of the best kinds are, however, successfully cultivated in low flat lands of the locality. The cream of the Dublin market for the best kinds of early Strawberries has, of late, been taken by the growers near Cork, where the fruit ripens earlier than around Dublin.

As already intimated, the bulk of the crops from these banks is sold in the city; but on the Sunday afternoons of July and August, vast numbers of people resort to the banks, and plenty of licensed public houses being open after two o'clock P.M., scenes are sometimes enacted that would not be so likely to occur if the visitors could be satisfied with the fruit, or even with dishes of Strawberries smothered with sugar and cream.

Near the Phœnix Park gate is a pretty Elizabethan lodge built with granite, the entrance to a gravel walk 550 yards in length, and communicating with the residence, having a wall covered with Ivy on one side and a line of Elms and Chestnuts on the other side of the walk. Close to the lodge some good-sized Hollies, Arbor Vitæs, Laurels, &c., had been planted last April, but owing to watering, syringing, and shading in the middle of sunny days, the trees have all done well, and now scarcely present a sign of being transplanted.

A few hundred yards from this on the road leading to Chapelroid is the carriage entrance, the gates and pallisading being in the form of a curved-in semicircle. A massive pier or pillar stands on each side, and in front of each pier in line with the roadway a handsome Chestnut tree. The lodge is plain, substantial, and commodious. The new house being built is also distinguished for simplicity and elegance. The blocks of granite, however, lying in every quarter, with stones, bricks and mortar, earth-heaps from foundations, lining out terraces, building their walls, with an open trench all the way to the river, along with masses of wood of all sizes and shapes, for wall-plates, ventilators, and rafter sash-bars, &c., all prepared so as to secure economy, efficiency, and substantiality, all presented to the eye of a stranger such a medley of intricacy, instead of the fine plants he was told he should see, but which under such circumstances were huddled into corners to keep them out of the way, that it would have required at least half a day of Mr. Pressley's time to enable us not only to obtain a clear idea of all that was intended, but to carry away with us a picture of what it would all be when finished. Our readers may have less regret on this account, as Mr. Pressley, whose contributions have already appeared in these pages, has promised to give us a full account, and especially of everything connected with the new houses as soon as the works are concluded.

How slight often are the means which almost unconsciously give a tone to our actions and our feelings! One philosopher may contend earnestly, that man with all his vaunted powers is the mere creature of circumstances; and another may argue as zealously that a man is really not worth his salt that could not bend circumstances to suit the purposes of his iron will. After all, however, the stubborn facts will remain, that whilst to a limited extent we may control and master circumstances, these circumstances, nevertheless, will greatly influence our conduct and our thoughts. Thus for years we had thought but little of Thomas Moore and his poetry, but the sight of the statue erected to his memory in College Green at once brought vividly before the vision of our mind many of those sweet melodies in which he sung of the beauties, and prophesied the greatness of Green Erin—the melodies which delighted us even more than the withering sarcasm with which he assailed all that he deemed opposed to his country's weal. Would that such a statue, instead of standing in a macadamised thoroughfare, had been surrounded with those beauties of Nature the poet loved and could describe so well.

Here, again, as we stood on this picturesque spot, the name and lineage of the owner seemed to bring before us the described realities of a cottar's Saturday night, the scene of parting with Highland Mary, the breathing of the independent ode, "A man's a man for a' that," &c., until passing on from the home at Ellisland, we seemed to get a view of the moor farm of Mossgiel, where a noble-hearted sire with horny hands and aching limbs undauntedly and perseveringly contended with a poor soil, an inferior climate, bad seeds, bad seasons, bad crops, and yet never gave up, because, if possible, possessing a keener sense of honour and manly independence than even distinguished his more gifted brother, the great poet of Scotland. But for showing too much of a prying inquisitive spirit into what belongs to the affairs of private life, it would have been interesting to know, by what control of circumstances, or by what merely being guided by circumstances, the son of such a sire and the nephew of such a poet uncle, came to hold the position of one of the principals in the great mercantile firm in Mary Street—came to be recognised as a man of refined tastes and liberal benevolence, a patron of the fine arts, an enthusiastic supporter of everything connected with gardening, and finally to be the owner of this beautiful place, where those who carry out his wishes speak of him less as a master, or employer, than as a kind-hearted sympathising friend.

Following up the same train of thought, it would not only be interesting, but useful to know the controlling circumstances and the guiding reasons that led to the choosing of this picturesque bank as the site for a new mansion, and the position for a new terraced garden. Besides the making of these terraces, the sight of large and lofty mills in the foreground would have been considered objectionable by many; and more especially when another site just across the road might have been chosen for a mansion and an ornamental garden. This ground, consisting of a somewhat level platform of about two acres, has some fine specimens of deciduous and evergreen shrubs and trees along a drive, and some good specimens of the Pinus and allied tribes in groups, and, no doubt, will now have more. A broad bridge over the public roadway will connect it with the new mansion, it being intended to make the bridge itself into a kind of garden entrance-hall. The simple fact of the fine Wellingtonia having been planted in a temporary manner led us to think that there had been some little consideration before the site of the mansion and the richest part of the ornamental grounds were finally decided on. The present arrangement will combine the advantages of both positions.

For a man engaged in the weighty anxieties of a great business no more fitting retreat could be found. I have no sympathy with those who, like the elder Repton, would plant out a fine view because the sight would remind one of the struggles and difficulties of the past part of a life, or the trying business avocations of the past day. Still the mind needs repose, and complete change of occupation and of object is often the best restorative rest that can be given. To obtain that complete change, there would be no necessity for planting out a single object whilst examining the matters of interest on this platform. The owner, though only a short distance from Dublin, hears and sees no more of it than if he possessed a mansion amid the fastnesses of Wicklow, or the wilds of Connemara. Even the views are refreshing; peeps through the trees of the Ivy-covered tower of Chapelroid Church; the fine spire of the church of the Royal Hibernian Military School; the Whin and Bramble slopes of the Phœnix Park, instead of the picturesque banks where the terraces now are; and though from a mansion placed well back on that platform, the eye would pass over the Liffey rolling in the valley in front, it would pass over the top of the mills as well; whilst from several points and vistas the river could be seen in the distance, clear and silvery as mirrored lakes.

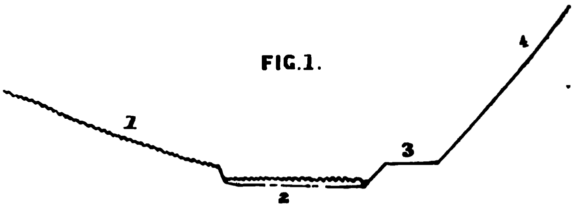
Before leaving this ground we must notice a fine Wellingtonia now 11 feet 5 inches in height, a most interesting account of which will be found at page 42, in the April 17th Number for 1860. A small plant was procured early in 1855, it was 9 inches high when transferred to a site 5 feet in diameter, well dug, and supplied with good soil, in March, the place being very exposed to test its hardiness. In the autumn of 1857 it had attained the height of 3 feet 6 inches; in the following summer it made only 11 inches of a leader—a proof that it had passed the good prepared soil. In February, 1859, a trench was taken out 20 feet in diameter, and 3 feet deep. Commencing at the outside, and carefully preserving the roots that had passed the five-feet circle, and replacing them in the new soil, consisting of turfy loam two years old, and two barrowloads of bog earth to each cartload of turfy loam. In that summer (1859) it made a leader of 22 inches. It is now the above height 11 feet 5 inches, and this summer made a leader of 2 feet 9 inches, and was of a beautiful colour. Mr. Pressley intends to give the plant the benefit of another trench when it needs it. We should like to know now the height of the fine plants at Bicton, which we noticed some years ago. Mr. Barnes had placed his plants on large mounds, resolving to widen the mounds as the roots got to the outside. We find at the page referred to, that Mr. Pressley had recommended to Her Majesty's Commissioners the planting of four of these fine plants at the four corners of the Wellington testimonial, and if far enough from it nothing could be more suitable.

We noticed, also, handsome, healthy specimens of Picea pinsapo, P. Nordmanniana, P. Jeffreyana, and Pinus muricata, bearing cones; nice plants of Cupressus Lawsoniana, Thujopsis borealis, T. gigantea, Pinus Sabiniana; a fine, dense-foliaged specimen of Cryptomeria japonica, 14 feet in height, and a fine specimen of Cryptomeria japonica Lobbii, taller, greener, and denser in habit, and having every appearance of being hardier than the common variety. Cupressus Lambertiana and macrocarpa planted in 1853, then 18 inches high, are now 26 feet in height, and of proportionate diameter. The first-named variety here sends forth its branches almost horizontal and flat, and then droops every point like a Deodar.

The impression on our minds from a first and hasty view was a kind of lingering regret that this snug spot was not chosen for the mansion; but we soon felt convinced that it could have stood no comparison with that adopted for combined artistic and picturesque effect. What, if the mills come in, to remind one of the busy activities of life? Many would rather like to be so reminded, and feel delighted even by the greatness of the contrast. Those who dislike all violent contrasts may either plant out the view of the mills altogether, or block out so much of them as to make them lend an additional interest to the picture.

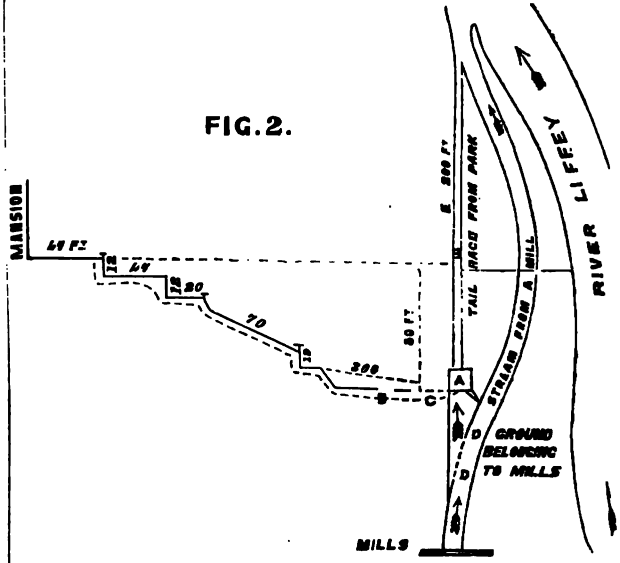
The sectional lines of the terraces and slopes are drawn to a small scale to get them in the page, but the figures will show their width and the height of the walls. The level of the first terrace in front of the mansion is 80 feet above the level of the river. From these terraces and the mansion fine views are obtained of the distant Dublin mountains, and about midway the fine, tall chimney of the Great Southern and Western Railways' works at Inchicore. Part of the opposite bank of the Liffey belongs to Mr. Burns, and may also be rendered picturesque. The terrace next the mansion, and the one below it, will be turf, and bedded in the picturesque style. A Yew-hedge probably will be planted at the back of the wall of the second terrace, to break the view of the mills. Trees will be planted in the meadow, which averages 300 feet in width, to promote the same result. In front of the second terrace-wall a new range of glass houses is in course of erection, 170 feet in length. The two centre houses will be span-roofed for Orchids and stove plants. To the right and left of these there will be lean-to houses for forcing fruits and flowers. These terraces are all level from east to west, and the floors in these houses will all be on a level—a matter of great importance for proprietors and visitors passing through them comfortably. The wide slope of 70 feet below the glass erections will be planted with dwarf fruit trees in lines up and down the bank, north, and south. These trees will be a fine, distinct feature when in bloom and in fruit.

FIG. 1.



1. Grass Land.
2. River.
3. Road to Lucan.
4. Strawberry-beds.

FIG. 2.



Showing terraces and slopes, the width of which is marked; also the mode of obtaining water, by working a wheel and pump, by means of water from the tail stream of a mill,

A. Pump-house.
D. Mill stream, dotted line showing opening to pump-house.
E. New tail stream from pump-house.
B. Broken line, representing 300 feet of meadow belonging to Mr. Burns.
C. Dotted line, two-inch pipes up the bank to the mansion.

The position of these terraced gardens will at once show the importance of plenty of water. Previously there had been much scarcity, though every roof had been used to catch all that fell on them. An ample supply is now obtained from the river, and that by a mode so simple, and yet verging so close on the impossible, that very few would have dared to attempt it. There is no difficulty in turning a water-wheel when a head of water can be had, or there is a good brisk flow in the stream; but there were none of these accessories in the present case. We could see Mr. Pressley was very anxious on the subject, and had considerable difficulty in making a new tail race from the pump-house through Mr. Burns' meadow, the fall in 200 feet not averaging more than 6 inches. The tail stream from the mills passes between Mr. Burns' ground and the river. At a curve in that stream, a fresh side being made, an opening was taken out, represented by the dotted line at D, to act at once on the water-wheel at A. This curve is about 100 yards from the

No weir could be placed across the stream, because that have raised the water on the mill-wheel above. There is :, therefore, of what is called a head of water—motion to :el is entirely dependant on the flow of the stream from ls in its course to the river. The force of this may be :d from the fact that from the wheel to the river there is fall of 6 inches.

wheel is 9 feet in diameter and 3 feet in width, makes an of six revolutions per minute, and works two double- pumps. Mr. Pressley informs us that since the middle ember these pumps have thrown on an average three per minute to the upper terrace—a height of 80 feet and nce of 500 feet. A large cistern is to be made 30 feet so that the height then will be 110 feet. A two-inch ipe is brought in a trench from the pump-house right up k. Our new friend, who had many difficulties with the l stream, &c., must have experienced a great satisfaction t a load of responsibility falling away from him when nd pumps did their allotted part so nicely. The great of the success consists in the obtaining such a motive and that from water moving so slowly as to be next to ry.

t with abundance of such water, the growing interest ine specimens on the upper platform lawn, the beauty terraces, the combination of the rare, and the lovely, useful in the new and older glass houses, the associa- ' healthy fruit trees in all their varied stages; and what e clear water of the Liffey reflecting alike sunbeam and am in the valley below, we feel but too well assured e liberal proprietor, and the kind, energetic gardener, ve to exercise even a still greater amount of their nce in coming years, in order that they may have the e and the pleasure of enhancing the delights of the true f the beautiful.

R. Fish.

'RUNING THE MORELLO CHERRY.

tree, like the Peach, produces its fruit upon wood of the ng year's growth (see *fig.* 6, in which *a* is a one-year-old nd *b* a two-year-old one). It is always trained in the e, and as the object is to have a full and regular supply s in all parts, our directions for the Peach fully apply this. The Morello Cherry produces plenty of wood, must not be laid in too thickly, if fine fruit is desired. it is sometimes cultivated as a standard, and we re- the late Mr. John Wilmot, of Isleworth, showing us an of this kind, in which the trees were annually pruned to abundant supply of young wood, by cutting away a of the older branches. The trees so treated produced ops, which would bear comparison with the other fine s of this well-known and successful cultivator. Mr. recommends working Cherries on the Prunus Mahaleb iature trees, and such must be beautiful objects for an 's garden, and not unworthy of having a small wire cage ect them from birds. We remember to have seen, at , in Essex, a large garden of dwarf Cherries covered over :e. Like the Apricot, the Cherry is very susceptible of rom large wounds of the knife; they are, therefore, to be , by the timely removal of superfluous growths.

THE GOOSEBERRY.

young Gooseberry trees are purchased they are often ith large aggregations of suckers about the stems, which rob the tree of nutriment, which should be otherwise iated, but are a plague to the cultivator during the xistence of it. All this may be avoided by proper n to the first formation of the plant when in the state of ;. A young shoot, 15 inches long, may be chosen and othly across at its base, cutting all the buds cleanly out he three upper ones, which are intended to form the ead. This will give a clear stem of 1 foot in height, ich no suckers will ever arise (see *fig.* 7, A). We urge n to this point from having seen it so much neglected. e buds *a a a* at the top of the cutting will each produce which in the following winter may be shortened to three buds; these in the third year will form the skeleton of re tree, as many being retained as circumstances and the t of the pruner may dictate. A well-formed Gooseberry uld resemble a basin in shape, and stand upon a clean stem or pedestal of 1 foot in height, for the purpose of keeping the fruit free from the splashing occasioned by heavy rains, which, without this precaution, would spoil much of it. All the branches should radiate from a common centre, neither crossing nor crowding each other.

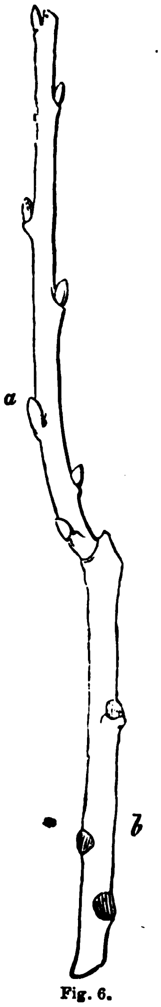


Fig. 6.

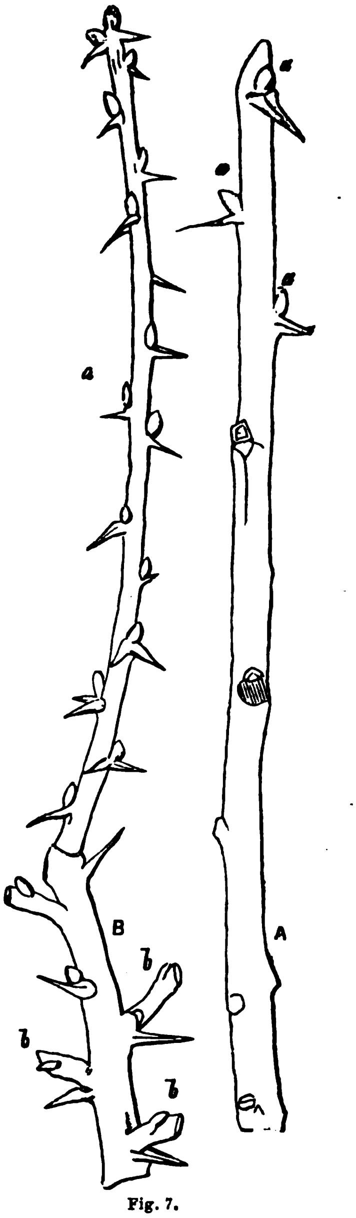


Fig. 7.

The fruit of the Gooseberry is borne upon the young wood of the previous year, as also upon spurs along the older branches (see *fig.* 7, B, in which *a* is young wood, and *b b b* older spurs). One great point of good management is, therefore, to provide a succession of well-placed bearing shoots, gradually removing the old and enfeebled branches. It is well to shorten the points of the young shoots a little, as it prevents them from becoming naked of spurs at their bases, which they are apt to do, the sap always flowing with greater force to terminal buds than it does to those which are situated lower down. Gooseberries are sometimes trained with tall single stems and weeping heads, or open basin-shaped ones, and sometimes as pyramids. Pretty and interesting as are these forms, they may be considered rather as ingenious displays of artistic skill on the part of the gardener, who has ample means for its development, than as really useful or remunerative in a superior degree. And then we do not find them adopted either by market gardeners or prize Gooseberry-growers. Sometimes this fruit is trained upon a wall, and for this purpose we think vertical training the best form. Where the fruit of the Gooseberry is gathered green for bottling, or for tarts, the trees may be left thicker of wood than where it is intended that they should perfect their fruit, and *vice versa*.

In shortening back old branches care should always be taken to cut to a rising shoot—*i.e.*, one whose tendency is to keep the tree upright rather than to bring it to the ground. The produce of trees thus managed will always be plentiful and good, and the advantages of order and method be as apparent in cultivating this humble fruit as the results of our advancing knowledge are evident in the higher departments of fruit culture.—H. BAILEY, *Gardener, Nuneham.*

NEW BOOKS.

THE ROSE ANNUAL.*—By the publication of the "Rose Annual" Mr. Wm. Paul lays the Rose growing world under an obligation by his spirit and enterprise. Knowing something, as we do, of the getting up of such a publication, we are aware at how much loss it must be accomplished, and that only his desire to keep his friends and the public in general well informed on the subject could induce him to continue it. The four Roses selected for portraiture this season are Beauty of Waltham Cross, a seedling of Mr. Paul's own raising; Marquise de Foucault (Tea) and Souvenir de Comte Cavour (H.P.), both raised by Monsieur Margottin; and Catherine Guillot (Bourbon), raised by Guillot of Lyons. They are executed in Mr. Andrews' best style. ***Beauty of Waltham Cross*** received a first-class certificate from the Floral Committee of the Royal Horticultural Society, where we had the opportunity of seeing it; it promises to be a useful hardy Rose of the Jules Margottin type, of which fine Rose it is, indeed, a seedling. Its hardiness was proved by the fact, that it withstood out of doors the trying ordeal of last winter. ***Marquise de Foucault*** is stated by Mr. Paul to be a comparatively old Rose, having been raised in 1854, between Strombio (T.) and Mrs. Bosanquet (B.) (query China?) In 1855 it was nearly lost, and hence has not been let out until last season. Mr. Paul considers it will be best suited for pot-growing. Thus two old Roses in this section come out this year, the present, and l'Enfant Trouvé. The figure of Souvenir de Comte Cavour does not do that flower justice; and either the bloom from which it was taken was an inferior one, or else it was reproduced from a French drawing. From what we saw ourselves of the flower we agree that it will prove to be one of the best of the forthcoming brood; but the petal is more shelly, and the flower more cupped than in the plate. Catherine Guillot, too, underrates that exquisite flower. As it was, Mr. Paul says, taken from a small bloom, we are quite sure this flower will take very high rank amongst its fellows in the same class.

Mr. Paul gives a very interesting summary of the events of the annus memorabilis 1861-62, the most destructive (and yet we believe likely ultimately to be one of the best) for Rose-growers ever known. He rightly attributes the past destruction of Roses, and indeed of all things, not only to the frost, but to the exceedingly unripened state of the wood, and considers Rose-growers need not be discouraged. It will, we believe, have cleared our gardens of many useless flowers, and lead to a wider introduction of newer and improved varieties. In the favourites of 1861, he enumerates about twenty-four as likely to be valuable varieties, giving the palm to Catherine Guillot, Duc de Cazes, General Washington, Madame Furtado, Princesse Mathilde, and Triomphe d'Ameins, and condemns, as we have, Reine des Violettes. He then enumerates the various Rose shows, and gives a useful list of the number of times each Rose has been exhibited, from which we gather that the most numerously-exhibited Roses were Comtesse de Chabrillant, Général Jacqueminot, Lord Raglan, Madame Knorr, Madame Vidot, Victor Verdier, and Gloire de Dijon. Finally, he gives us a chapter on the forthcoming brood, and descriptions of eighty, warning us at the same time against the notion that we are to take the owner's description of them as correct. In fine, we can honestly say, that there is collected here much information on the subject of Roses, old and new, likely to be most valuable to all who take interest in the Queen of flow[illegible] an advertisement on th[illegible] [illegible]

this we think is a move in the right direction, and the experience of the past ten years will, we doubt not, be ably brought forward in his new work.

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* [illegible] William Pa[illegible]
Garden [illegible] Kent . Co., Paternost[illegible]

WORK FOR THE WEEK.

KITCHEN GARDEN.

DURING weather like the present a number of operations may be proceeded with which are generally deferred to the spring. Ground should have the necessary turnings to bring it to a friable state by the time that it will be wanted for spring cropping. *Asparagus*, a heat of about 55° should be maintained in the beds; if linings are necessary, a narrow one entirely around the bed is preferable to a broad one, or a portion only, as a strong heat is not necessary. *Beans* and *Peas*, protect those that have made their appearance above ground, either by covering with light dry soil, or by sticking on each side of the row small boughs of the fir, or any other evergreen. Sow a succession in the open ground, and between the rows of Peas try a row of round Spinach. Follow up with energy and system the hoeing, surface-stirring, and dusting among advancing crops. Destroy mice. *Mushrooms*, the beds to be made as wanted, using a portion of fresh turfy loam with the droppings. *Onions*, the ground intended for them would be benefited by a top-dressing of well-decomposed rich manure, which should be forked in and well knocked about on frosty mornings. *Potatoes*, a quantity may be put together in a box and covered with soil, and the box placed in heat; this will cause them to sprout, and forward them considerably for planting in the hotbed. Make small hotbeds for sowing Radishes, and Early Horn Carrots, Cauliflowers, and Walcheren Broccoli, Lettuce, and various other things which will be found useful in the spring if the autumnal sowings should fail. Sow a small batch of Celery for the first crop on a slight hotbed. Cress and Mustard to be forwarded as wanted.

FLOWER GARDEN.

Any alterations that may be on hand, involving the removal of a considerable bulk of soil, cutting walks, or anything which can be judiciously done now, should be pushed forward as expeditiously as possible, in order to have the hands at liberty for the ordinary routine of spring work, which will soon be demanding attention. Deciduous trees and shrubs may now be thinned out and pruned, if such is required; evergreens, however, had better remain untouched for the present. Planting, too, should not be done, except in extreme cases, at this season. The Hollyhocks planted in borders are very liable to the attacks of slugs, which greedily feed on the fleshy roots; a dusting of soot occasionally will make them less palatable.

FRUIT GARDEN.

The general pruning and training of wall trees and espaliers may be proceeded at all times, except during severe frost. Apricots, Figs, Peaches, and Nectarines are, however, better left for some time to come. Gooseberries and Currants planted in rows 10 feet apart, and trained as low espaliers will bear well and economise space, as vegetable crops of various descriptions can be advantageously grown between the rows. Newly-planted trees of all kinds to have their roots protected from frost by a mulching of short litter or dung. Prune Vines out of doors without delay. Cut out the old wood from Raspberries and the canes not wanted for fruiting. Replace decayed stakes, and tie to them the canes neatly; small twigs of any tough willow are generally used for the purpose. Dress with light manure, and dig the ground between the rows. The pruning and thinning of trees in the orchard may still be continued.

STOVE.

Some of the plants that have commenced their growth may require shifting. A portion of the stock of Gesneras, Gloxinias, and Achimenes may now be plunged in bottom heat to start before potting them. As the principal kinds of Begonias will now be showing bloom, they should be staked carefully, to preserve their fine foliage from being damaged when removed, as they may be, if required, to adorn the conservatory. Still be cautious in the application of more fire heat to Orchids; it is far better, the season being early, that they start somewhat later with a free growth than to make a premature and feeble one. Care to be taken that a due proportion of moisture is maintained in the atmosphere; although the majority require to be dry at the root during their rest season, nevertheless, they require a moistish atmosphere when in a state of motion.

GREENHOUSE AND CONSERVATORY.

Although it is not advisable to shift the general stock of greenhouse plants for a few weeks to come, nevertheless, under some circumstances, a few plants may require fresh potting. Many softwooded plants require to be headed back, or pruned, at this season, and require a sufficient time to produce shoots an inch long before they are in a fit state to be repotted. Attend to the training of Tropæolums and other climbing plants on wires or trellises. A forcing-pit is indispensable to keep up a regular succession of Tulips, Hyacinths, Narcissi, Cytisuses, Azaleas, Cinerarias, and other such early-forced flowers as may be required at this season. Care to be taken that Camellias receive no check, or their buds will be endangered. It will be necessary to examine softwooded plants, in order to remove decayed leaves, and make an arrangement that will give them liberty to receive the full benefit of light and air. Turn over and prepare compost for Pelargoniums.

FORCING-PIT.

Bring in a successional lot of bulbs; it is presumed that they have been potted for some time, and that the pots are full of roots, when success may be expected to follow; but if they have been lately purchased and potted they will not bear the excitement of forcing. In all such cases several weeks of root-action are necessary before they are fit to be subjected to the application of heat. Pinks, after they have made a little growth, require to be removed to a cooler place, or the buds will fail. Gardenias require a warm moist atmosphere, which may be slightly increased if they exhibit activity. Get all the hardy forcing plants, if not already done, under the protection of the greenhouse stage, or any other such place protected from frost; it is also advisable to excite them gradually before they are introduced to the forcing-pit. Temperature of the forcing-pit to be from 60° by night to 75° by day with sunshine, to shut up early with a moist atmosphere; but a little air to be given, unless the external cold is very severe, before leaving the fire for the night.

PITS AND FRAMES.

The stock of bedding-out plants should now be looked over, and if the quantity of some sorts is too limited for the demand at bedding-out time, a portion should be removed into a warm house to produce cuttings for propagation. It is, however, advisable that bedding-out Geraniums and other such plants should be well established, and of tolerable size, before they are transplanted to the open bed, as fresh-struck plants of such are apt to grow too fast and bloom late in the season. As severe weather may now at any time be expected, a good supply of litter should be in readiness for extra covering if required.

W. Keane.

DOINGS OF THE LAST WEEK.

In our last week's gossip, near the end, the words "Robin alone in it" should have been "Robin alive in it." I just mention this for three purposes. First, to thank the printers for deciphering so well my hurried writing, as well, if not better, than I could do myself if I had the manuscript ten days after it was written: I fear it is a besetting sin with me. When a correspondent's letter comes in my way that I have to con over and over, perhaps a dozen times, before I can make out the meaning clearly, I just try and place myself in the situation of the printers, and, for a bit, don't I write plain and legibly, every i dotted and every t crossed, and stops all right, &c. But, heigh ho! a hurry comes, and the pen cannot move a quarter fast enough for the words that are clamouring for room; and, I fear that many little errors are entirely the fault of the writer. Then, secondly, I want to impress on the minds of correspondents, writing to the Editors for information, the importance of writing legibly, and not to cross or interline their letters with small scratching, that it requires a microscope to make out; but to think that if their eyes are young and good enough to see a pin on gravel 10 yards off, other folks' eyes may not be so good as theirs. And, again, to write the words fully, and not leave us to judge what sd and th—— are intended to mean; we would far sooner have "no *heend*" for "no end," and misspelling in abundance, though the sooner all gardeners spell well the more delighted we would be. If information is desirable, it is also very desirable that the persons willing to give it to the best of their ability should have as little trouble as possible in finding out what is really wanted. These remarks do not, by any means, generally apply. Gentlemen's letters are generally written like print, ladies' like copper plate, and gardeners' ditto, showing clear intellectual perceptions however hard and horny the fingers that held the pen; and, in the clearness of the arrangement, showing what advances have taken place since Mr. Loudon started the "Gardener's Magazine," as we had it from his own lips that for several of the first volumes every article sent had to be rewritten, except those from one correspondent (Mr. Gorrie). Would that that philanthropist could now see the results of his labours. And, then, thirdly, though Mr. Robin did outlive, by some means, our *sulphur fumigation*, we never found anything else that did. Flies, newts, toads, and frogs, if we did not see or remove them, or if not covered over with earth, generally lost their lives. And what we wish especially to press on every reader is the necessity of making sure that the wood of deciduous trees is thoroughly hard and ripened before burning sulphur in the house in which they grow. There is no plan better for settling the scale, &c., than such a smoking; but every green bit of wood will be sure to suffer. We have done Peach trees in a similar way, but the ripeness and hardness of the wood are essential considerations, and the house ought to be opened next morning; and, if the weather should be sunny for a day or two, the house should also be shaded until all smell of sulphur has gone. We have lately had several inquiries on the subject; and what we want to impress is, that when the wood is hard and thoroughly ripened, burning sulphur is a good servant. In every other case it is a devastating master. Unless the conditions are sure, be content with washing and other means instead of so using sulphur. It is also best to burn sulphur in a house when the woodwork and the house, as a whole, are dry. When wet, there is apt to be such a chemical combination as would affect the colour of the paint. Once we burned a quantity of Laurel leaves with the sulphur, and the rafters became of a shining dark blue, from the formation of a prussiate of lead. We tried to wash it off and failed, but in about a fortnight the atmosphere changed them gradually to their natural colour.

KITCHEN AND FRUIT GARDEN.

Much the same as last week. When Vines in pots are rising two years old—that is, had two summers' growth, they may be started in any house with an average temperature of 50°, and so may Peaches, Apricots, and Cherries, though 45° will be sufficient for the three last at first, and the two last should never have above 55° at night until the fruit is set, and plenty of air given when in bloom, and even a little shading if the weather should be very bright. For younger Vine plants—say struck from eyes last January, and intended to fruit about the end of May and the first part of June, a bottom heat of 75° will be of great advantage to them, increasing it to 80° and 85° as the Vines get into bloom. For all early forcing in pots, *bottom heat* will be an advantage, provided mere growth is not encouraged instead of the fruiting part. Thus Peaches and Apricots out of doors often go blind because there is no reciprocal action between roots and tops, because the wall is sooner heated than the roots at the bottom of the wall, and hence the importance of any screen that will keep the blossoms back until warmth also brings the roots into action. When trees are in pots we can prevent all this by giving the roots a push on, rather in advance of the buds, so that when they expand and open there shall be plenty of sap ready to sustain them. This bottom heat must not be carried too far, or the roots will lose their vigour and robustness, and also be apt to be burned. For Peaches about 60°, Apricots a little less, and 55° for Cherries, would be about high enough until the fruit was set. Another thing, as alluded to above—too much bottom heat will so encourage leaf growth, as to discourage fruit-buds so much as to cause them to be thrown off, or shrivelled up. For instance, in the case of Strawberries. I speak not of April or May, but of the beginning of January. Plunging the pots in a mild hot-bed of leaves is very apt to cause the roots to come through the pots into the leaves, and the lower leaves are thus so much encouraged, that the central fruit-bud may be starved or shrivelled. When early Strawberries are thus plunged the heat should be moderate—little above 60°, plenty of air given, and the pots should stand on a hard substance, such as tiles or boards, that the roots may be induced to ramify in the pot, instead of coming outside of it.

This latter remark should apply to all fruiting and flowering plants that are to be forwarded with bottom heat, and which are intended afterwards to stand exposed on a stage or platform. Rightly used, this bottom heat is ever a powerful auxiliary; but, like liquid manure, it should not be abused. This brings us to some queries as to potting now plants of Vines and Peach trees intended to fruit early this season, with or without bottom heat. If the plants are in a good condition for fruiting, we would rather keep them in the pots in which they are, and top-dress with rich compost, and give manure water as needed. If we were obliged to shift by having the plants sent with balls, we would plunge the pots in a bed of tree leaves out of doors, covering the pots all over, and making sure that the roots averaged 70° to 75°, whilst the tops were exposed to the atmosphere, with, perhaps, an evergreen branch stuck among them. When the roots were running freely, then place glass over the plants, or remove them under glass, and if still with a little bottom heat all the better. But in the case of well-ripened Vines—say in eight or twelve-inch pots, we would prefer fruiting them in these pots and top-dressing as above; and where showing the fruit in pots was no object afterwards, then we would widen the hole at the bottom of the pots and allow the roots to go out as they liked, either in a bed of soil, or of cool, decomposing, fermenting matter, that gave a little gentle heat at first. The plant would go on without receiving any check until the fruit showed and was set; and then the increased room for the roots would give nourishment to the fruit, provided the foliage was not allowed to take all the running, but stopping and disbudding were duly attended to.

FORCING FLOWERS.

The importance of a mild heap of tree leaves can hardly be over-rated for the forcing of all hardy shrubs, plants, and bulbs. Everything will bloom all the better if the root action precedes that of the bud action. How nicely the Hyacinth and Narcissus do when this bottom heat is judiciously applied at this season! How well it answers with all deciduous shrubs, as Lilacs, Thorns, Rhododendrons, Azaleas, Deutzias, &c.; and the same may be said of many herbaceous plants, as Musk, Fumarias, Lily of the Valley, &c. Of course, they will come in any house where heat is applied, but always better when bottom heat can be judiciously given: hence every tree leaf is of importance for getting artificial heat now, and a stock of compost afterwards.

PROPAGATION.

In autumn many things do best when struck cool, though they take longer time; but in the spring of the year the whole of the plants intended for grouping in the flower garden, and which do well from spring cuttings, will answer best when placed in a heat averaging from 55° to 65°, and considerably higher at bottom than at top. Verbenas in such cases will strike like couch grass—so much so, that we frequently make a bed on purpose, and stick it full of cuttings about 1½ inch apart, so as to dispense with pots and their substitutes, taking the frame off as soon as they have struck, and protecting with boughs, &c., until planting time. Even such hardy things as Chrysanthemums when struck in spring are all the better for a little bottom heat, and to be plunged in a mild heat after getting their first potting, and hardening them gradually to the open air. In fact, the right use of bottom heat at this season from simple means is a matter of no little importance.—R. F.

TRADE LISTS RECEIVED.

Descriptive Catalogue of Annual, Biennial, and Perennial Flower Seeds. W. Thompson, Tavern Street, Ipswich.—This is a very copious and excellent selection. The plants are not only arranged according to the natural system, but there is an alphabetical index, and each species is briefly described, so that it is really a very useful catalogue [illegible] either the amateur or [illegible] to keep for reference.

[illegible]

[illegible] write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener and Country Gentleman." By so doing [illegible] subjected to unjustifiable trouble and expense. [illegible] communications should therefore be addressed solely to [illegible] Editors of the Journal of Horticulture, [illegible] 62, Fleet [illegible]

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Heating Conservatory (*Jan*).—From the ground plan shown, the pipes might go under the shelf all round, and if 9 inches from the stems of the creepers, they would harm them but little. Another plan might be to have the front border edged with ornamental ironwork, stout enough to conceal the pipes, or to form the pipes themselves. The edging to the central bed might also be so done. If these should be objectionable, we would run the pipes in chambers under the pathway, and either have iron gratings, with stone sides, or stone flooring, and brass gratings in the stone. The iron grating would be best. In such a beautiful house we would confine pots to the sides, and have a bed in the centre. The appearance could be changed by plunging pots in the bed. A stage in the centre, and a bed at each end, we should thoroughly disapprove; it would be a mingling of what should be distinct. If stage at all, have it all stage. The bed, in the circumstances, would be the handsomest. Close to the pathway it might be planted with Swiss moss; and green moss might be used in the centre for covering or plunging in, so that only a few fine, tall plants need be planted out permanently.

Buying Orchids (*A. B. C.*).—It will be more prudent not to order the hardy Orchids from the nurserymen till about the first week in April. They will then be repotted and pushing their buds. If you desire to have a considerable number of species, you would be more certain to get them by advertising for them. Many nurserymen do not advertise at all, and those who do, do not always particularise their whole stock.

Bulb (*A St. Alban's Subscriber*).—Your drawing of the bulb is sufficient. From it and the leaf you sent we should say it is some Nerine, that is going to bloom too late, or some bulb very near to Nerine: but there are five hundred kinds of bulbs which would look, at some stage or another, just like your drawing and like the leaf you sent; so no one could be certain of the name from the look and leaf. When it blooms, if it is a Nerine, all the stamens unite at the bottom in a swelling, or "gibbous union," which is the family crest. If the stamens do not thus unite it is not a Nerine, and you must send us a bloom or two with the full length of the peduncle, or flower-stalk, in a tin case, or in some way to prevent it being flattened or put out of shape. At the same time say where the bulb has been kept for the last two years, when it went to rest, or if it did rest how long it remained dormant, and at what stage in the growth of the leaves the bulb usually blooms.

Small Charcoal (*F. J. L.*).—We have not "J. B.'s" present address; but you may obtain the small charcoal at any large charcoal dealers almost gratis. At least it was so at a place we know far distant from London. We should prefer for fuel in a small greenhouse, the small coke and breeze which you may buy at the gasworks for a trifle.

Vines Grapeless in 1861 (*A. B. C.*).—As your Vines are so healthy and strong, thorough ripening of the wood strikes us will be of more importance than manuring. A dressing of horsedung on the border, or superphosphate of lime will be good—say a quarter of a hundredweight of superphosphate to 300 square feet. From your description of the Vines, however, we should not be surprised if the roots need raising. It may be, however, that the ungenial summer of 1860 was the cause of the unfruitfulness, by not ripening the young wood.

Heating a Cold Pit (*An Old Subscriber*).—So far as we can see there is no difficulty at all in the matter. The space between the pits is of no consequence whatever. If you place the pipes in a hollow arch, and open at the end into the cold pit, the most of the heat will thus enter it; and if at the end next the propagating-pit there were an opening to shut or open at pleasure, you might thus have a constant succession of fresh air, somewhat heated, pouring into the pit. As being more effectual, and also more out of the way, we should prefer the pipes to be placed near the front of the cold pit. The heating will be quite sufficient to keep out all frost, &c., but not to force things very early. We presume that the mode of connection with the pipes in the propagating-house, or with the boiler, is understood, as there are no questions on that subject. The tilting the sashes will do well enough, and it would almost be a pity to break the wall for ventilation in it now. If such had been placed back and front when building, there would have been less necessity for moving the sashes. Even now a few slides inserted in the front wall, 12 inches long, by 3 inches or 4 inches wide, just over the pipes, might be an advantage.

Forcing Laburnums.—*E. M.* will be obliged by "O. B." stating at what age, and how, he prepares Laburnums for forcing.

Plant-case for Exporting Plants (*An Old Subscriber*).—Make it of wood, one inch thick, with iron-plated corners; the roof hipped, and one side only glazed, with strong wire net over the glass. It need not be absolutely air-tight; but the glazed side must fit close enough to exclude sea water.

Black Muscat of Alexandria (*A Subscriber*).—This Grape was in the collection at Chiswick Gardens about ten years since; but it is not there now. We are told that it was well known about Paris. Whoever gave it a [illegible] character was entirely wrong. Tabernæmontana alba, or citrifolia, is a stove evergreen shrub, native of Jamaica, with yellow, sweet-scented flowers. You will find an account of it in Donn's "General History of Plants," iv. 88. We do not know the work you mention. It is certainly no authority.

Names of Fruit (*J. H. G., Gravesend*).—The Apple you have sent is the Court of Wick, so your gardener was quite right. (*P. L. N.*).—Your Pear is certainly not Knight's Monarch. The true one is a round Pear, and one of the best in cultivation. That which you are now growing for it is quite worthless, so we would advise you to have the tree grafted. (*Pomona*).—No. 1 is Pearson's Plate, a capital dessert Apple; 2, Calville Blanche; Court of Wick; 4, Dumelow's Seedling.

Names of Plants (*A. B.*).—Yours is a very small fragment, but it looks [illegible] Amherstiana variegata, a [illegible] Indian shrub, [illegible] warm greenhouse. Spiræa Lindleyana is a pinnate-leaved deciduous species There are no evergreen shrubby Spiræas (*W. H. Mayne*).—1, Asplenium fragrans; 2, Adiantum tenellum, a small var. of hispidulum. We have had no experience with the Holly Fern planted in the cocoa-nut fibre compost. Being rather a difficult species to cultivate, we should advise your trying it, and reporting the result. Pot firmly. (*Claude R·syet*).—1 and 5, Abies Menziesii; 2, Pinus excelsa; 3, Picea cephalonica; 4, Picea pinsapo, robust; and 7, the same, less robust; 6, Juniperus chinensis; 8, Pinus pumilio; 9, Abies cœrulea.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CHRISTMAS POULTRY MARKET.

It is said one half of the world knows not how the other lives; and it is certain that the other half has not the slightest idea by what means, and in what manner, those things that are immediately necessary to their comfort and well-doing are brought to their doors and into their dwellings. The children's books of the present day are far more replete with information and sound knowledge than were those their parents read when they were nearly grown up, thirty years ago; and Peter Parley has done much for the rising generation. Again, good illustrations have done more; a correct and plain picture will teach more, and, above all, give a more correct idea than sheets of letterpress. But there are some things that cannot be drawn and engraved. Among them is Leadenhall Market at Christmas time. We will endeavour to describe it. No one can form an idea of the enormous quantity of food consumed, or rather sold, during eight or nine days before Christmas-day. Most people make and receive presents during that time; and we believe it is a fact, that a man at the head of a very large retail business in the City marked a hare and gave it away. From wholesale men and others it came back to him (the identical hare) three times during the week. Whether as an expression of obligation for favours during the year, or from a good and laudable observance of an old custom that urged those who had it in their power to distribute good cheer among their connections and dependants, we cannot say; but it is certain enormous purchases are made by the large City houses for distribution among their customers. Distillers and brewers send to publicans; woollen-drapers to tailors; millers to bakers; timber merchants to builders; builders to architects, and so on. A large firm will spend in Turkeys only from £200 to £300, and many add thereto a hamper of Game and a Stilton cheese. Then, among the large buyers of poultry in the shape of Geese, come the holders of goose-clubs. These are well-to-do publicans. About August placards in the windows state the goose-club has begun. Every man who pays in a small weekly sum has his goose and a bottle of spirits at Christmas.

There is generally a lull before the busy week sets in. Every one in a shop or at a stall, from the master downwards is aware that a heavy time is coming. All the odd corners are cleared out, everything is removed from the premises, and the experience of years is brought into play to multiply accommodation and to increase facilities. Those who, wishing to see the course of the Christmas market, went to Leadenhall one day too soon – that is, before the goods came in, would be surprised to find "empty benches," and men who were husbanding their resources by hardly giving an answer to those who put a question to them. In a description we have read of a fishery in Italy, it is said that news having been brought that the fish are off the coast, all the fishermen draw up their light boats, and form in listless groups on the quays. At last, as far as the eye can see, there is a ripple that slowly but gradually increases. All strain their eyes, but none will give the first warning, because of the laughter that follows a mistake. Several have he same impression; and at last, doubt ceasing, all cry out "The Fish!" and every man to his boat, whence in a quarter of an hour he is killing as best he can.

Just so, the shops all swept and emptied; the master ittting, it may be on a chair or on a hamper, and the men tanding about. Buyers are careless, seeing they have a week efore them. Jokes are passing. Salesmen say, "Things will be ery short;" buyers say, "The weather is very bad." Salesmen ay, "Things are bought very dear in the country;" buyers say, "There is no one to give a price in town;" and badinage goes n till a truck appears at the top of one of the passages leading into the market.

It is very well to talk about the men of olden time, and the urdens they could bear. "Nonsense all, my merry masters.' People used to talk about the giants of the days of chivalry, when men went in plate and chain armour, "cap à pié." When some of the noblest and oldest of the land furbished the armour of their ancestors for the Eglington tournament it was a world too small; and when the Lord Mayor treats the cocknies to a "knight in complete brass armour," "ditto in steel," "ditto in chain," "ditto in a Milan suit." He once wrote to the Colonel of the Life Guards, asking the loan of the four tallest men in his regiment to be knights in armour for the day. On comparing the men and their "stubborn suits," it was found they were too tall, too stout, and too wide; and the first magistrate of the city sent for the four smallest of the Light Dragoons kept at a long low building near the Kensington Gate, for escort purposes.

Put two of your men "of the olden time" to that hand-truck, and see if they will run up the hill with it. A long, narrow truck, with two handles, running on two massive iron wheels about 5 inches in diameter, shod with an iron semicircle at bottom, which turns up, and thereby prevents the load from slipping off, bearing now four huge hampers. Only those who have packed and carried poultry know how closely it lies, or how heavy it is. The sight of the men leaning to their burden is as the fish to the boatmen. Every man looks up. "Eastern Counties!" says he who has pushed behind; while the front man (albeit the streets are frozen, and perhaps the temporary spouts at the plugs are besieged by shivering boys and maid servants fetching water) takes off his hat or cap, wipes the water from his smoking brow, and eases his panting chest. "Many?" asks the salesmen. "Don't know; *we* have about a hundred tons below in the street." These, the Eastern Counties, bring the best and largest Turkeys, huge Geese, and average fowls. But this truck is like the broomstick that was sent for the beer —it never stops. It is always running up and down, fetching its load. It is not alone. The stream has set in; the Great Northern, the North-Western, the Great Western, all pour in supplies. One brought this year 900 tons one morning. Now the market loses all shape and form. There is barely room to pass between the piles of hampers that threaten to fall down. Talk of beetling cliffs, we are not sure the overhanging hampers would not be quite as fatal. Few people have any idea of the weight of three score of fat Geese. The work of the market begins. The huge flats and hampers disgorge their contents. The shops so empty yesterday are now full of Geese, Turkeys, and fowls. The Turkeys hang in double and treble rows; and some idea may be formed of the value of the stock as it arrives when we say the row that is just put up in that shop will make £60. The old tradition of Turkeys is 1*s*. per lb.; but that holds good only to a certain weight. Taken as an average it may be called the present value.

What will be said of a salesman taking in a day £1000 in small sales of casual passers-by? It is perfectly true. Imagine the Christmas market has lasted two days; spite of wholesale and retail buyers the quantity of goods increases. Not only is the market piled up till circulation becomes almost an impossibility, but the hide market adjoining Leadenhall is also full of waggons; it has become impossible to unload, and, therefore, the horses are taken out and the goods are watched. The shops at market will not shut up any more till Christmas is over. The retail poulterers have covered their fronts with cloths. Policemen patrol and divide the watch with sleepy men. Here and there snoring will tell you that some are snatching a few hours sleep; and, if you look, you will see them curled up in some straw. It will be but a short nap. The public was in possession of the market at twelve o'clock—it took an hour to put away; and, before five, the waggons will be unloading. About six the retail poulterers begin to arrive from all parts, buying is a real business with all these men, and, for an hour there seems a hope that the stock will decrease. It is only a hope. The everlasting trucks are at work again, and the man in the shafts, as he is jocosely called, is suddenly brought up in his effort to drag three hampers, 5 feet wide, through a space of 3½ feet: this causes a stoppage, and then it takes half an hour's patience on the part of the police to restore things to a proper flow. This suffices to show the amount of goods pouring into the small area covered by the market; stop it for a few minutes and you will be astonished at the mass it forms.

Now, then, having viewed the market, and seeing it lighted with gas *a giorno*, loaded with goods that it would seem hopeless to expect can be eaten while sweet, let us view some of the principal actors in the scene. Just imagine the mind of a large salesman during the week. He has two or more thousands of pounds worth of goods before him, all belonging to different people, and much of it made up of small sendings. Do any of our readers recollect the new Foreign Secretary of the Republic in "Jerome Paturot?" Installed in his new office, he is at once told there is a misunderstanding at Tiflis, a coolness with Trebizond, and an affair at Teheran. No marvel if he mixes one with the other. So the salesman has twenty-one cock Turkeys from T. S. Fakenham, seventy hens from F. T. Fakenham, thirteen hens from G. I. F. and a hundred from F. I. G. The same in Geese.

TRIMMING SPANISH FOWLS.

I was much gratified at seeing in your "Letter Box" of last Tuesday, a strong condemnation of the practice of trimming Spanish fowls over the eye, &c., and an exposure of the disgrace that would be expected from the Judges on any detected culprit.

There is a prevailing opinion existing amongst amateurs, and confirmed by your own remarks upon the shows, that the trimming of Spanish fowls is becoming general—encouraged, probably, by the non-infliction of the threatened judgment. As this may arise from the difficulty of deciding whether a bird is trimmed or not, perhaps the suggestion of a magnifying-glass may not be unimportant.

If the requisite points may, without penalty, be produced artificially, one great stimulus is removed for breeding them naturally; and the result would be ignominious to the laudable and interesting amusement of "the poultry fancy," and must also prove detrimental to poultry sales. For who would give £10 for a bird if he expected that after the first moulting it would be only worth 2*s.* 6*d.*?—Amateur.

PHILOPERISTERON SOCIETY'S ANNUAL SHOW.

On Friday last the annual Show of the birds belonging to the members of this Society was held at the Freemason's Hall, Great Queen Street. It may, perhaps, be desirable to inform some of our country readers that this Exhibition differs entirely from an ordinary show, inasmuch as there is no competition for prizes, and the birds are exclusively the property of the members, who incur the great trouble and expense of engaging the Hall yearly for the pleasure of inviting their friends to see their truly magnificent collection of birds. The Hall was filled with the highly ornamental pens belonging to the Society, and there were many hundred birds exhibited.

The *Powters* occupied the most prominent position at the end of the Hall. Mr. Eden, of Salford, exhibited some magnificent Blues, and one of the grandest pair of Black-pied birds that we have ever seen. Mr. Butts' birds were, as usual, the object of great attraction; his Blues and Whites being particularly elegant. Some of Mr. Haynes' Powters were particularly good. We noticed especially a pair of Mealys, and some Yellows that for size and soundness of colour were highly commendable. Mr. Tegetmeier also exhibited some exceedingly good Whites of great elegance of shape.

The *Carriers* were extremely good. The style of Mr. Haynes' birds is too well known to need description. Mr. Dale exhibited a pen of very first-rate birds, rather heavier in style than Mr. Haynes', but of undeniable excellence. Mr. Chalker, of Plymouth, and Mr. Parkinson also forwarded good specimens.

Amongst Shortfaced *Tumblers* Mr. Luery's Almonds were pre-eminently beautiful for their extreme goodness of colour and markings. Mr. Esquilant's were much noticed for their exquisite form; and his Mottles and Tumblers generally fully maintained his reputation as a most skilful breeder. The Blue and Red Beards and Almonds of Mr. Archer were fully up to his usual standard of excellence. One of the greatest features of the Show was the extraordinarily good character of the *Barbs*, of which two large pens were shown by Mr. Stevens, of Axminster and Mr. Eden. One of the Yellow cocks of Mr. Stevens appeared to us as the best bird of that colour that we have ever seen. The *Turbits* of Mr. Stevens were very good, not only in colour but also in form. Mr. Wicking, who, after a short absence from the fancy, has returned to a pursuit in which he was so successful for so many years, exhibited three pens of German birds, two of *Swallows* and one of very excellen [illegible] [illegible] *Archangels* was [illegible] Mr. Stevens, but they were not in quite as good feather as his other birds. Mr. Harrison Weir's pen of *Fantails* fully maintained his ancient reputation as having some of the very best birds of that variety. The only important varieties not exhibited were Owls, Trumpeters, and Runts.

The Exhibition was enlivened by a very good performance of music by Messrs. Shapcott. The attendance of visitors was almost inconveniently great, and the Show may be said to have passed off with great success. The absence of the mingled feelings that necessarily result from a competition for prizes, the extraordinary merits of the birds exhibited, the character of the visitors, and the general completeness of the arrangements, render the Philo Shows the most agreeable reunions of the kind in the kingdom. We therefore hope that the prosperity of the members may continue to increase,

> And when they next do have a show,
> May we be there to see.

ABERDEENSHIRE POULTRY SHOW.

This first Show of the Society was held in the Music Hall, Aberdeen, on the 1st and 2nd inst. We are informed that it was a very satisfactory gathering, and that it would have been still more so if it had not been held at the same time as the Perth Exhibition. The following is a list of the awards:—

POULTRY.

Spanish.—First, R. Somerville, Cattle Market, Edinburgh. Second, S. Taylor, Inverury. Third, W. Hay, Aberdeen. *Chickens.*—First, W. Hay, Aberdeen. Second, J. Reid, Fetterletter, Fyvie. Third, B. L. Reid, Balcairn, by Oldmeldrum.

Dorking.—First, Madame Thomond, Park House. Second, Mrs. J. Wagstaff, Westerton, Huntly. Third, Dr. Wilson, Oldmeldrum. *Chickens.*—First and Third, Madame Thomond, Park House. Second, G. Taylor, Inverury. Highly Commended, J. Anderson, Ruthven House, Meigle. Commended, Mrs. J. Wagstaff, Westerton, Huntly; Mrs. Ironside, Brae Cottage, Keithhall.

Cochin-China.—First, G. Murray, Aberdeen (and very highly commended for cup). Second and Third, Madame Thomond, Park House. *Chickens.*—First, J. Reid, Fetterletter, Fyvie. Second, Madame Thomond, Park House. Third, Mrs. W. Pyper, Belhelvie Village.

Game.—First, H. E. Brown, New Scone, Perth (also winner of silver cup). Second, S. Pope, Aberdeen. Third, T. Douglas, Aberdeen.

Hamburgh (Silver or Gold-pencilled).—First, Mrs. White, Athol Place, Perth. Second, G. Taylor, Inverury. Third, J. Gordon, Manar. Commended, A. Hay, Aberdeen.

Hamburgh (Silver or Gold-spangled).—First, G. Taylor, Inverury. Second, W. Hay, Aberdeen. Third, Mrs. G. Davidson, Aberdeen. Commended, G. Taylor, Inverury.

Poland (any variety).—First, S. Pope, sen., Aberdeen. Second, W. Hay, Aberdeen. Third, S. Pope, jun., Aberdeen.

Bantams (any variety).—First, J. Edwards, Aberdeen. Second and Third, J. Anderson, Ruthven House, Meigle. Commended, Madame Thomond, Park House.

Brahma Pootra.—First, Second, and Third, Madame Thomond, Park House.

Any other Variety.—Highly Commended, Madame Thomond, Park House.

Geese (any colour).—First, J. Alexander, Findon, Hillside. Second, J. Gordon, Manar. Third, G. Troup, Janefield, Cults.

Ducks (Aylesbury).—First, Mrs. J. Wagstaff, Westerton, Huntly. Second, G. Davidson, Belhelvie Village. Third, Sir J. D. Elphinstone, Bart., M.P., Logie-Elphinstone. Commended, G. Troup, Janefield, Cults.

Ducks (any other variety).—First and Third, W. Forces, Whiteford, Pitcaple. Second, J. Anderson, Rutherston House, Meigle.

Turkeys (any colour).—First, Mrs. R. Wilson, Hayfield, Hilton. Second, A. F. Williamson, Caskieben Mains, Blackburn. Third, Sir J. D. Elphinstone, Bart., M.P., Logie-Elphinstone.

PIGEONS.

Tumblers.—Highly Commended, W. Wilson, Aberdeen. Commended, J. Hay, Aberdeen.

Fantails.—Highly Commended, G. Chalmers, Aberdeen.

Powters.—First, J. Hay, Aberdeen. Second, F. M'Rae, Aberdeen.

Runts.—Highly Commended, J. Hay, Aberdeen. Commended, J. Hay.

CANARIES.

Yellow Belgian.—*Cock.*—First, K. Campbell, Aberdeen (and winner of extra prize for the best bird in the Show). Second, J. Hunter, Aberdeen. Third, A. M'Donald, Aberdeen. Highly Commended, W. Jamieson, Aberdeen. Commended, W. Sirrol, Aberdeen. *Hen.*—First, J. Mitchell, Aberdeen. Second, W. Wilson, Aberdeen. Third, W. J. Routledge, Aberdeen.

Buff Belgian.—*Cock.*—First and Third, W. Ogilvie, Aberdeen. Second, W. Murray, Aberdeen. Commended, W. Wilson, Aberdeen; J. Mitchell, Aberdeen. *Hen.*—First, W. Jamieson, Aberdeen. Second, A. M'Donald, Aberdeen. Third, K. Campbell, Aberdeen. Highly Commended, J. Mitchell, Aberdeen. Commended, A. Farquhar, Woodside.

Flecked.—*Cock.*—First, J. Macdonald, Aberdeen. Second, A. Wilson, Aberdeen. Third, J. Mitchell, Aberdeen. Highly Commended, K. Campbell, Aberdeen. *Hen.*—First, J. Leeds, Aberdeen. Second, K. Campbell, Aberdeen. Third, W. J. Routledge, Aberdeen.

Common Canary.—*Cock.*—First and Second, Mrs. E. Evans, [illegible] Cottage, Aberdeen. *Hen.*—Highly Commended, S. J. Mitchell, Aberdeen.

Mule.—First, S. J. Mitchell, Aberdeen. Second, W. Garden, Aberdeen. Third, J. J. Garden, Aberdeen.

PRIZES GIVEN BY A MEMBER OF THE ASSOCIATION.

[illegible] Somerville, Cattle Market, Edinburgh. High

Commended, Mrs. White, Athol Place, Perth. Commended, W. Hay, Aberdeen.

DORKING COCK.—Prize, R. Walker, Hillside House, Portlethen. Commended, Mrs. Ironside, Brae Cottage, Keithhall

COCHIN-CHINA COCK.—Highly Commended, J. Reid, Fetterletter, Fyvie.

GAME COCK.—Prize, W. Hay, Aberdeen. Highly Commended, T. Douglas, Douglas' Hotel, Aberdeen. Commended, Mrs. Rennet, Aberdeen.

Silver Cup to the Owner of the best Pen of Fowls in the Exhibition.—H. E. Brown, New Scone, Perth, for Game Cock and pair of Hens.

JUDGES.—Of *Poultry*, Mr. John Ridpath, Edinburgh; Mr. W. W. Johnston, Broughty Ferry; Mr. Robt. Copland, Silvermoss. *Pigeons and Canaries.*—Mr. M'Clelland, Perth; Mr. Mitchell, Perth; and Mr. Barnett, Aberdeen.

PLYMOUTH AND WESTERN COUNTIES POULTRY EXHIBITION.

THROUGH the indefatigable exertions of an untiring and persevering Hon. Secretary, the Plymouth Poultry Exhibition has, we believe, become an established fact; and whilst congratulating Mr. Sandford and the Committee on the success which they achieved at this their second Exhibition, we also rejoice at being able to congratulate our readers on the probability of an annual treat such as we enjoyed on Wednesday and Thursday last—for treat it was, if only to take a walk round the different classes for Game fowls collected together in the splendid Assembly Room adjoining the Royal Hotel, on entering which we could but be struck with the excellent arrangements for the comfort and safety of the 300 pens of valuable poultry collected there. As a proof of the excellence of the arrangements, all the Game fowls were on a level, taking the whole of the top rows: therefore they showed to a great and equal advantage, whilst those birds beneath them were sufficiently high to admit of their being seen with but little difficulty.

But to review the different classes, commencing with Black-breasted Red *Game*, in which Mr. Swift obtained first with a noble pair, well deserving the honour they gained; hard run, however, by Mr. Mathews, whilst many of the highly commended pens were but a short way behind. But the gem of the Game fowls, however, was to be found in the first-prize pen of Brown Reds containing such a cock as we seldom, if ever, saw—in the very best of condition, perfect in feather, and hard as a board, with a hen well worthy of him. To this deserving pair we need scarcely say the cup was awarded as the best pair of Game fowls in the Exhibition. We believe Mr. Sandford, the fortunate owner of this much-to-be-coveted bird, refused £10 offered for him by Mr. Archer, of Malvern, or his representative. Mr. Burgess also exhibited an excellent pen. In Duckwings, the winners of the first prize travelled all the way from Beverley, but still were shown to great advantage. We need scarcely say they were Mr. Adams'. Mr. Dawson was a good second in the "any other variety" class. The first prize went to a good pen of Blacks; the second to Whites.

In *Spanish*, Mr. Rodbard had to succumb to an excellent pen of Mr. Lane's, which, if we mistake not, were the Birmingham winners. We thought the former gentleman's were not in the condition he usually exhibits them in. Mr. Heath's well deserve the prize they won.

Dorkings afforded another and a greater triumph to Lady Louisa Thynne, who obtained both first and second prizes with magnificent birds; whilst a good pen of Rose-combed exhibited by Lady Julia Cornwallis, had to be content with a third. But amongst the commended pens were to be found many worthy of prizes.

In Buff *Cochins* Mr. Tomlinson's were not up to his usual standard: he, therefore, had to yield the laurels to a superior pen of Mrs. Fookes'; whereas in the class for any variety Mr. Ford had it all his own way, taking both first and second.

The *Hamburghs*, were weak in numbers, and, if we except Lady Julia Cornwallis's Silver-spangled and Mr. Martin's Silver-pencilled, poor in quality; Lady Cornwallis taking both prizes for her class, and the cup for the best pen of Hamburghs in the Exhibition.

Polands were represented by one pen of Silver only.

In the "Variety class" the first and third went to Brahmas; whilst the second and fourth went to Indian Game and Crève Cœurs respectively.

Game Bantams were in great force, mustering thirty pens, being nineteen of Reds, and eleven of other varieties. Mr. Camm and Mr. Bayly taking the prizes for the former; and, in the latter, Mr. Rodbard obtained first with a pretty pen of Piles, which were immediately claimed at the price they were entered at—£5 10*s*., and, doubtless, the fortunate purchaser was much pleased with his bargain. Mr. Camm's Duckwings also well deserved their honours. In Sebrights Mr. Lewis's Golden and Silver were perfect, and with them he obtained both first and second prizes, Gold taking the precedence. Mr. Hutton's pen of Blacks were first in the variety class, and hard run Mr. Rodbard's Pile Game for the medal; but it was eventually awarded to the latter pen.

As usual Mr. Fowler reigned supreme in *Ducks*, taking both first and second for Aylesburys, and first for Rouens, with splendid birds; his second-prize pen of Aylesburys being immediately claimed at four guineas. In the class for Ducks of any other variety Mr. Sandford obtained first with a capital pen of East Indian, Mr. Bayly's well-known pen of Brown Calls being second; whilst Mr. Martin's was third.

In *Dorking cocks*, Lady Julia Cornwallis's well deserved the prize she won.

Game Bantam cocks mustered sixteen pens of as good birds as often compete together. The cup and sweepstakes were, however, awarded to a beautiful little Grey, the property of Mr. Forest, and we shall be mistaken if he does not yet add to the stock of plate with which he has already helped to deck his master's sideboard.

The *Game Cocks* were a show in themselves: twenty-two of the best birds England can produce entering into a spirited competition for a handsome seven-guinea cup, in addition to a sweepstakes of 10*s*. 6*d*. each. It, however, went, and we think most deservedly, to one of the best Black Reds we ever saw, the property of Mr. Archer, and it would be difficult to find a better model of what a Black Red Game cock ought to be; and, as he walked round his roomy pen, we could not help remarking that he looked like one of the right sort—one that would fight amain with credit to his owner and himself; as, after all, that ought to be the standard, as, if cock-fighting is not now indulged in (and it is not at all desirable that it should be, nevertheless), a Game cock that could not or would not fight is not a Game cock at all: this is a fact which some of the Game breeders of the present day seem quite to have lost sight of, and let their feelings of humanity carry them a little too far. Mr. Burgess's second-prize bird is, however, not to be classed among these, as he was evidently both ready and willing to do better with anything or any one who may give him cause. There were too many other birds in this class well worthy of mention for us to have time or space to enumerate them; but out of the whole twenty-two pens, there was not to be found a bad bird amongst them, and that is saying a great deal.

The show of *Pigeons* was limited to Carriers only: therefore it was not large, but unexceptionably good; Mr. Square and Mr. Goss taking the principal prizes. Mr. Holman also showed excellent birds.

The weather was fine and the attendance good, everything going off to to the satisfaction of all parties; and we do say Mr. Sandford is well deserving of the most hearty thanks of the whole poultry community for bringing about such a result—for through him was the Show established; through his exertions has it been brought to the position which it now holds in the poultry world; and through him was it that exhibitors had such a treat afforded them last week as they seldom have in the West of England; the entire management doing the worthy Hon. Secretary the greatest possible credit, as there were no delay, no confusion, no mistakes, and, therefore, no complaints.

Long may Mr. Sandford live, and may Plymouth Poultry Exhibition go on year by year steadily improving, must be the hearty wish of every poultry exhibitor in the United Kingdom.

GAME (Black Reds).—First, R. Swift, Southwell, Notts. Second, S. Matthew, Chilton Hall, Stowmarket. Highly Commended, Rev. G. S. Cruwys, Cruwys Morchard, Devon; S. Dupe, Evercreech, Bath; E. Archer, Malvern; V. Sandford, Chatsworth Lodge, Mannamead; J. Rodbard, Aldwick Court Wellington. (An extraordinary good class.)

GAME (Brown Reds).—First and Cup, V. Sandford, Chatsworth Lodge, Mannamead. Second, J. Burgess, Burleydam, Whitchurch. Highly Commended, T. Shaw, Kirkham, Lancashire; J. Brackenridge, Chew Magna, Bristol; W. Dawson, Selly Oak, Birmingham. (An extraordinary good class.)

GAME (Duckwings and other Greys and Blues).—First, H. Adams, Beverley, Yorkshire. Second, W. Dawson, Selly Oak, Birmingham. Highly Commended, S. Matthew, Chilton Hall, Stowmarket; R. Swift, Southwell, Notts. Commended, A. M. Sloper, Seend Park, Melksham; S. Dupe, Evercreech, Bath.

GAME (any other variety).—First, J. Weeks, Bromyard, Worcester. Second, J. Camm, Farnsfield, Southwell. Highly Commended, W. Dawson, Selly Oak, Birmingham; Rev. G. S. Cruwys, Cruwys Morchard, Tiverton. Commended, V. Sandford, Chatsworth Lodge, Mannamead.

SPANISH.—First, H. Lane, Milk Street, Bristol. Second, J. Rodbard, Aldwick Court. Wrington. Third, A. Heath, Calne, Wilts. Highly Commended, V. Sandford, Chatsworth Lodge, Mannamead; J. Fowler, Prebendal Farm, Aylesbury; D. Parsley, Rock Cottage, Bristol. Commended, W. Watson, Calstock, Cornwall. (A first-class collection.)

DORKING (any colour).—First and Second, Lady F. Thynne, Muntham Court, Worthing. Third, Lady J. Cornwallis, Linton Park, Staplehurst. Highly Commended, Lady J. Cornwallis; T. L. Browne, Chard, Somerset, W. Watson, Calstock, Cornwall; Capt. G. S. Strode, Newnham Park, Plympton. Commended, E. Burton, Truro; S. G. Holton, Manor House, Cleve, Evesham. (A very good class.)

COCHIN-CHINA (Cinnamon and Buff).—First, Mrs. H. Fookes, Whitchurch, Blandford. Second, H. Tomlinson, Balsall Heath Road, Birmingham. Highly Commended, A. Heath, Calne, Wilts. Commended, J. Fowler, Prebendal Farm, Aylesbury.

COCHIN-CHINA (any other variety).—First and Second, Mrs. J. B. Ford, Countess Weir, Exeter. Third, J. Fowler, Prebendal Farm, Aylesbury. Commended, E. Pigeon, Lympstone, Devon; J. Fowler.

HAMBURGH (Golden-pencilled).—First, — Barter, Union Street, Plymouth. Second, W. E. Elliott, Plymouth. Commended, Capt. G. R. Edgell, Bramford Speke, Exeter; Lady V. Howard, Charlton, Malmsbury.

HAMBURGH (Golden-spangled).—Prize, W. R. Lane, Bristol Road, Birmingham.

HAMBURGH (Silver-pencilled).—First and Second, J. Martin, Claines, Worcester.

HAMBURGH (Silver-spangled).—First and Cup and Second, Lady J. Cornwallis, Linton Park, Staplehurst. Commended, W. Miller, Sherborne, Dorset.

POLAND (any variety).—Prize, J. Mably, Lay St. Farm, Ilford, Essex.

ANY OTHER VARIETY.—First, Mrs. Craigie, Chigwell, Essex. Second, P. P. Cother, Salisbury, Wilts. Third, Lady L. Thynne, Muntham Court, Worthing. Fourth, W. Brock, Ebrington Street, Plymouth. Highly Commended, E. Pigeon, Lympstone, Devon; Rev. G. S. Cruwys, Cruwys Morchard, Tiverton. Commended, Miss M. Ewart, Broadlees, Devizes.

GAME BANTAMS (Black or Brown Reds).—First, J. Camm, Southwell, Notts. Second, H. D. Bayley, Ickwell House, Biggleswade. Highly Commended, R. Hawkesley, jun., Southwell, Notts; V. Sandford, Mannamead, Plymouth; R. Liscombe, Uplands, Tamerton; R. Swift, Southwell, Notts; M. Leno, jun., the Pheasantry, Markyate Street, Herts; H. Shield, Northampton. Commended, Miss F. Macdonald, Lympstone, Devon. (A very good class.)

GAME BANTAMS (Duckwings).—First and Medal, J. Rodbard, Aldwick Court, Wrington. Second, J. Camm, Southwell, Notts. Highly Commended, W. H. Oxland, Morley Villa, Laira; E. Burton, Truro; V. Sandford, Mannamead, Plymouth; R. B. Postans, Brentwood, Essex; H. Shield, Northampton. (A very good class.)

BANTAMS (Gold or Silver-laced).—First and Second, M. Leno, jun., the Pheasantry, Markyate Street, Herts. Third, H. D. Bayley, Ickwell House, Biggleswade. Commended, E. Burton, Truro.

BANTAMS (any other variety).—First, E. Hutton, Garden House, Pudsey, Leeds. Second, H. D. Bayley, Ickwell House, Biggleswade Third, R. Brotherwood, Almondsbury, Bristol. Highly Commended, Mrs. W. Wright, Chatsworth Lodge, Mannamead; Rev. G. S. Cruwys, Cruwys Morchard, Tiverton. Commended, J. Rumsey, 182, Shadwell, London.

DUCKS (Aylesbury).—First and Second, J. Fowler, Prebendal Farm, Aylesbury. Highly Commended, E Burton, Truro. Commended, Mrs. Edgell, Brampford Speke, Exeter.

DUCKS (Rouen).—First, J. Fowler, Aylesbury. Second, Lady L. Thynne, Muntham Court, Worthing. Highly Commended, J. Brackenridge, Chew Magna, Bristol. Commended, J. B. Ford, Countess Weir, Exeter.

DUCKS (any other variety).—First, V. Sandford, Mannamead. Second, H. D. Bayley, Ickwell House, Biggleswade. Third, J. Martin, Claines, Worcester. Highly Commended, V. Sandford; S. G. Holton, Cleve, Evesham. Commended, H. Adney, Lympstone, Devon.

SINGLE COCKS.

SPANISH.—Prize, J. Rodbard, Aldwick Court, Wrington.

DORKING.—First, Lady J. Cornwallis, Linton Park, Staplehurst Second, Lady L. Thynne, Muntham Court, Worthing. Highly Commended, Lady L. Thynne. Commended, — Elliott, Plymouth.

HAMBURGH (Gold or Silver-spangled).—Prize, Lady J. Cornwallis, Linton Park, Staplehurst.

BANTAM (Game).—First and Cup, W. S. Forrest, Greenhithe, Kent. Second, H. D. Bayley, Ickwell House, Biggleswade. Highly Commended, R. Moon, Sandford Lodge, Wavertree, Liverpool; R. Hawkesley, jun., Southwell, Notts; J. Camm, Southwell, Notts; W. Lane, Bristol Road, Birmingham; V. Sandford, Chatsworth Lodge, Mannamead. (A very good class.)

GAME COCK SWEEPSTAKES.—First and Cup, [illegible]. Archer, Malvern. Second, R. Swift, Southwell, Notts. Third, S. Dupe, Evercreech, Bath. Fourth, J. Fletcher, Stoneclough. Highly Commended, J. Fletcher; A. B. Dyas, Madeley, Salop; S. Mattthew, Chelton Hall, Stowmarket; H. Horton, St. John's, Worcester; H. Adney, Lympstone, Devon; R. Liscombe, Uplands, Tamerton; E. Archer, Malvern. Commended, S. Matthew; T. Burgess, jun., Burleydam, Whitechurch.

PIGEONS.—*Carriers.—Cock.*—First, A. L. Silvester, St. Paul's Square, Birmingham. Second, W. Vickers, 3, Cobourg Place, Exeter. Highly Commended, A. L Silvester. *Cock* (hatched in 1861).—First and Second, W. J. Square, Portland Square, Plymouth. *Hen.*—First, H. Holman, Mannamead, Plymouth. Second. J. Square, Plymouth. Highly Commended, — Goss, Osborne Place, Plymouth. *Hen* (hatched in 1861)—Prize, H. Holman, Mannamead. *Cock* and *Hen.*—First and Second, — Goss, Plymouth. Third, [illegible]. Square, Plymouth. Highly Commended, A. L. Silvester, St. Paul's Square, Birmingham. Commended, Miss F. Macdonald, Lympstone, Devon; [illegible] L. Silvester. (An excellent class.)

The JUDGES were—for *Game*, Mr. T. Challoner, of Whitwell, [illegible]field. For *all oth[illegible] classes* [illegible] George Saunders [illegible] [illegible] Rowde, Devi[illegible] and M[illegible] Ballance [illegible] [illegible] Taunton [illegible]

[illegible]ARK[illegible]

[illegible]Y IN 186[illegible] [illegible] [illegible] severe [illegible] the [illegible] and autumn [illegible] have eve[illegible] [illegible]

tolerable condition. One hive only out of fourteen stocks had succumbed to the rigour of the season, and the cause of its death could be easily accounted for. Kept at a distance of 2½ miles from my house, two days elapsed before I was informed that the covering of the hive had been blown off in one of the many gales of last winter, and that a pitiless rain of thirty-six hours duration had been allowed to beat on it. Although no time was now lost in replacing the covering, a severe frost following quickly on the heels of this thorough soaking, proved fatal to the entire community.

About the beginning of April I inspected all my hives, gave clean floor-boards where necessary. (This had been done in most instances more than once previously.) Where practicable, as in bar-hives, took out the combs, satisfying myself as to the existence or non-existence of queens, and noted the quantity of brood and general appearance, altered two of my large octagons from nine bars to ten in a diameter of 14 inches, had manufactured a number of Langstroth frame-hives, and made preparations for the transference of stocks into some, and of colonising others with natural or artificial swarms. As the result of my inspection, I found Nos. 1, 5, and 10 weak; Nos. 4, 7, 9, and 16 moderately good; while Nos. 2, 6, 8, 11, 12, and 13 were in prime condition.

No. 1, an old straw-hive, worked very poorly, but a little pollen was taken in on fine days. Often when other hives were very busy hardly a bee showed out from this hive, so thinly populated was it.

No. 5 was an octagon Stewarton of two boxes, a swarm of the previous summer. Bees were more numerous than in No. 1, but still a poor lot. As very little pollen was ever carried in, I believed the queen to be dead, which, on inspection, proved to be the case. These two stood side by side, and I thought it a good opportunity of trying a spring junction of bees. The combs of No. 1 being very black, I determined to cut hives and combs horizontally through the middle, and give it one of the two boxes of No. 5, with the bees. On turning up the straw hive for the purpose, a very fine queen was racing over the lower part of the combs. This was gratifying, as up to this time it had been very doubtful whether the hive possessed a queen or not. But no brood could be detected, though from the scarcity of bees the cells were visible for some distance up. Keeping the hive reversed, I carefully passed a long-bladed carving-knife through the straw and the combs; but in doing so cut through some brood in the centre: not a great deal was injured, as the bees had chosen the less-used cells towards the upper half of the hive. The queen did not again appear; and hoping she had escaped all injury, I united the two hives simply by placing the single octagon-box (in which were by this time congregated all the bees), of No. 5, under the upper half of No. 1. The bees joined without any fighting. The difference in their activity was at once very perceptible, and in due time the bees, besides filling a small super with honey, threw off two fine swarms. Had this union not been effected, No. 5 would soon have ceased to exist, and No. 1 would, in all probability, have struggled on through the summer, scarcely preserving a miserable existence.

No. 2, a large-sized octagon-box was, at the time of inspection, in splendid condition, nearly every comb being crowded with brood. Originally constructed for nine bars, I now altered the box (shifting the combs to another for the purpose), so as to carry ten bars, nearly in accordance with the measurements given by Langstroth, the American author. Having to cut fresh notches for many of the bars, it was necessary for me to saw off pieces of some of them, loaded with comb and covered with bees as they were, which was effected with but little disturbance or annoyance. A bar without any comb was added near the centre, and in three or four days a new comb was made by the industrious workers, and filled with eggs by the very prolific queen. Although this hive stands near the centre of this large city in a most confined situation, having in its front a row of tall houses, and close at its back a boundary of very large trees, yet its industry and activity were almost marvellous. Box after box of thirteen-inch-diameter Stewartons were added until three were supered above the stock and densely filled with combs, which when taken off weighed fully 50 lbs. nett, including about [illegible] [illegible] sealed brood returned to the bees. This hive is now in [illegible]ition, and this day (January 8th), the bees were out in large numbers, the noise of their flight to and fro being plainly audible at a considerable distance.

No. 6 was a common straw hive, purchased for a mere song [illegible] preceding autumn [illegible] most starving condition. Food was liberally supplied. Early in the spring this hive, also in my town garden, showed great activity and forwardness, and was removed into the country about the end of March. On inspection the combs filled but about two-thirds only of the interior—a positive refutation of the idea expressed by your Oxfordshire correspondent at page 288, that such hives are not worth keeping through the winter. This was by far the best working hive I had. On the 17th of May I drove out every bee, obtaining a magnificent swarm, with which my second Langstroth frame-box was colonised. The parent stock was at this time densely filled with combs and brood down to the floor-board. Cutting these combs out of the skep, I fitted them as well as I was able into another set of frames, retaining them temporarily in place with soft lead wire used by gardeners. Adjusting these in my third Langstroth-hive; I looked about for bees to unite to it to hatch out the brood and form a good colony. I fixed on No. 10—a very weak lot possessing a fine queen, a small patch of brood, and a mere handful of bees. So wretched had been the appearance of this hive, that only a few days before I had cut out the combs believing there was no queen, but unexpectedly found a very fine one, with a small piece of brood-comb. This, with a few of the other combs, I placed in a small box, intending by degrees to build up, as it were, a serviceable stock, or have a queen ready for any emergency at the time of making artificial swarms. Here, then, was just what was required: the combs of No. 10, fixed in frames, added to those of the driven stock (No. 6), made up the whole number (ten), required. The following day I transposed this artificial stock with a pretty strong one, which supplied the amount of population requisite for rearing the brood. Both the hives, that peopled with the driven swarm and the one with the transferred combs, throve admirably and rank among my finest stocks.

No. 7, "the adjuster-hive," early in the year promised well. The bees did not take to the super so early as I expected. After partially filling it, they threw off two large swarms. The second issue being almost as large as the first. The super, though containing a good deal of honey, was also made the receptacle for a large quantity of brood. After the issue of the second swarm all the queens must have been lost or destroyed, as the bees fell off in numbers; and while looking about for a spare queen to give them, they were overpowered by a vigorous onslaught of wasps. This hive was at a considerable distance from town, or it would not thus have perished for want of a timely gift of a royal head.

No. 8 was an octagon-box like No. 2, and also treated like it to an additional bar. But here the likeness ended. Though early furnished with super accommodation, the bees chose to swarm, and—must I confess it?—the swarm flew off, no one except the fortunate finder being the wiser until afterwards.

No. 9 may be cited as a pretty little case of super-posing, which I see on reference to my journal turned out as follows:—A box which had been worked as a super, containing about 20 lbs. of sealed honey, was placed under No. 9 the previous autumn, in lieu of feeding, of which the hive stood much in need. On the 16th of April, I wished to reduce the doubled hive to one compartment only, but on removing the lower box I found a quantity of brood, none being visible, so far as I could determine, in the stock-hive, and, therefore, restored it to its original position. On the 23rd I changed the place of the boxes, and put what had been the lower one on the top of the stock. The adult bees and those from the sealed brood as it hatched out gradually went below; but the eggs and the youngest part of the brood remained undeveloped, and by the end of the month the box, once more a super, quite deserted by the bees, was removed. This No. 9 came only under the rank of "moderately good" at the time of the April inspection; but it rapidly improved, and notwithstanding that many bees were taken from it to strengthen a weaker stock, afforded a beautiful super of about 20 lbs. weight. This might have been increased, but from its location at a distance from my house, additional room was not afforded them so soon as it was required.

I must defer the consideration of the remaining hives in my apiary for another Number of the Journal.—S. Bevan Fox, *Exeter.*

(*To be continued.*)

VENTILATING HIVES DURING WINTER.

In reply to the inquiry made by Mr. W. Johnson, in page 308, I beg to disclaim all intention of recommending the system of non-ventilation during winter, which is as yet only on trial with me, and I am especially careful to recommend nothing to others which I have not fully and fairly tested myself.

Some years ago I was induced to doubt the advisability of ventilating bee-hives during winter, from observing instances in which it had so retarded breeding that the colony remained weak the whole of the ensuing summer. I also considered it a state of things that would be very unlikely to subsist among bees in their natural condition, and these reasons have induced me to try the opposite system.

It is a well-known fact that aqueous vapour is present in the air at all times, but more in proportion as the air is warmer. Now, as the temperature of a healthy hive of bees during winter has been proved by Huber's experiments to average above 80°, which is, of course, very much higher than that of the external atmosphere, a similar effect is produced to that which is often noticed in crowded rooms during cold weather. Not only are large quantities of moisture condensed on the windows, but it is seen also to trickle down the very sides of the apartments. This effect is owing to the warm air being chilled by coming in contact with cold walls, when it at once parts with a considerable portion of the water which it had previously held suspended, and which in the case of wooden bee-hives is deposited on their interior surfaces. The result is, that top, sides, and floor-board become ultimately so saturated with moisture as to be totally unfitted for their original purpose, and disease supervenes, which either greatly weakens or entirely destroys the whole population.

This unfortunate state of affairs may doubtless be avoided in a great measure, by having recourse to a system of ventilation which checks the deposition of moisture by lowering the temperature of the interior of the hive. This, however, appears to me only the substitution of a greater evil for a less one, inasmuch as Ligurian bees certainly continue breeding during the coldest weather, which breeding must inevitably be put a stop to if the internal temperature be not kept up to its natural height.

My first idea was to counteract this tendency to accumulate moisture by making boxes of thick wood; and, with this view, have used many an inch and a half in thickness throughout.* After a fair trial, these thick boxes have, in their turn, been condemned as having failed to fulfil their object. When once fairly saturated with moisture I have found it very difficult to dry them, whilst their weight is so great as to render them almost unmanageable.

I have hitherto considered that the equable temperature of a well-protected bee-house would preserve even wooden hives from this very great evil, whilst exposed straw hives would be equally exempt, owing to their being so much better non-conductors of heat than those made of wood. I have, however, now lying before me a letter from a distant correspondent, who asks advice in this very emergency; the hives in question being both of straw and wood, and having the advantage of being placed in a store-room, whence the bees obtain access to the open air through wooden blocks substituted for bricks in the external wall.

What enhances the difficulty of this question is the fact that results vary so much in different hives under apparently precisely similar circumstances. Of my own twenty-six stocks (all of which are on the non-ventilating system), about twenty are in perfectly good condition, whilst in two of the remaining half-dozen, a great number of bees have fallen victims to disease engendered by excessive moisture.

In answer to "A. W.," I stated my intention of trying unpainted boxes not exceeding seven-eighths of an inch in thickness. I may now say that the results of this trial are so far favourable.

On the other side of the Atlantic, where the evil is even more severely felt than with us, owing to the universal employment of wooden hives and the extreme severity of the northern winters, the question is deemed an open one, as may be seen by the following quotation from Mr Langstroth:—"The best apiarians are still at variance as to how much air should be given to bees in winter, and when their hives should have upward ventilation, or not." He recommends upward ventilation during winter, the bees remaining in the open air; whilst Mr. Quinby advocates their being placed in a dark room, either inverted or with the crown-boards removed.

In opposition to both these authorities we have Mr. Harbison an excellent practical apiarian, who has taken out a patent for the use of straw mats, which he applies internally at the top, sides, and back, removing the two side frames and the glass from the back window to admit of their introduction.

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* I have, however, never gone to the extent of Dr. Mackenzie, who recommends that wooden hives should be 2 inches thick.

Borrowing a hint from this last-named gentleman, I intend trying the effect of lining the interior of wooden hives with rush matting, which is the most appropriate material I can think of, and which being a pretty good non-conductor may have the effect of abating, or possibly doing away with the evil. My frame-hives have sufficient space at the top, back, front, and sides to admit of its temporary introduction during winter, whilst any new hives may be made sufficiently large to admit of the matting becoming a permanent institution. In due time the result of this experiment will be communicated by—A DEVONSHIRE BEE-KEEPER.

SUPER-POSING.

WHEN I transmitted you my last remarks, page 227, on the above subject, it was not my intention to have again alluded to it; nor would I have done so but for the very opportune letter addressed by your excellent correspondent, "B. & W.," page 217, to his friend, "A DEVONSHIRE BEE-KEEPER," as to the "solution of the super-posing problem."

"B. & W." first treats of bees vacating supers for their stock-hives, and, however sensible his remarks are, they do not apply to the discussion under review. He next takes up the applicable case of the union of stocks at the end of the season, with a free passage upwards between the combs, which was duly stipulated for in my advice to "A. W." at page 78; and, with the exception of the dubiety expressed as to the desire of "A. W." to get his bees to ascend, which a glance at page 38 would at once satisfy him was the soul of the query, his surmise as to the probable result is quite in unison with my actual and universal experience; and have, therefore, much pleasure in placing him on the ascending side of this controversy, and compliment him as the only southern apiarian writing on it who seems to possess a clear idea of the first principles of the storifying system.

In discussing the subject some of your correspondents, apparently not practically acquainted with storifying, confound the procedure of bees in supers—one thing with these movements, in stock-hives another and quite different affair. The skilled apiarian, taking advantage of their undeviating practice of storing honey at the very topmost part of the hive, places thereon a still higher "alp" in the shape of a shallow super, admitting by means of contracted end or other communications the honey-gatherers only; studiously excluding as far as practicable, for obvious reasons, the royal mother, greedy drones, and main body of the bees; and, by means of this artificial adjunct (totally unfitted from its shallowness for a stock), he removes the finest portion of the store for his own benefit.

On the other hand, quite the opposite course is pursued in uniting stocks in bar-hives. The slides or crown-board (same thing as to result), having been withdrawn from the under colony, thereby affording a free and uninterrupted communication between every comb, the lower invariably ascend and amalgamate with the higher, as "B. & W." so shrewdly guessed, becoming one hive under one queen and government. Indeed, I may mention it is the practice of many of the famous Ayrshire bee-keepers placing their swarms in two of their octagon-hives at the outset; and I have myself found the combs wrought from the bars in the upper box resting and attached to the bars of the lower, the thickness of the bar the only separation between the two combs. On the union being effected, if at the end of the season, as in the case before us, the bees must naturally be puzzled to find to them the strange anomaly of honey stored in the centre of their hive (formerly top of the lower), and thinking it extremely bad generalship to leave so valuable a portion of the commissariat unprotected without the lines, live upon it, calling into requisition the transport service, and move the remainder within; and guided by the same unerring instinct that causes the dormouse to retire at the approach of winter to that snug nest where she had previously laid up her store, so the bees similarly retire to the upper portion of their hive, where their store had been placed in anticipation, and there subsist the long winter through on the fruits of their industry.

A RENFREWSHIRE BEE-KEEPER.

P.S.—Since [illegible] the above, I have just seen [illegible] issue of [illegible] hand to refer to (a friend having borrowed my copy), I can hardly believe he really recommends therein attempting the union of stocks in bar-hives without first removing the top-board, and only allowing so contracted an aperture for communication, as afforded by "a one-inch or two-inch hole in the top of the lower hive."

If "The English Bee-keeper" so teaches, this may partly account for the rather hazy opinions put forth by English apiarians as to the results of the union of stocks.

A "STEWARTON APIARIAN'S" query regarding the uniting two bar-hives, and his allusion to his "never having removed the top-board," surely savour of irony. The taking off such from a "Stewarton" hive would be a task somewhat akin to that imposed by our Scotch proverb of "Taking the breeks* off a hielanman," for the very ostensible reason that they were never on; the slide serving the purpose in the one case, what the kilt does in the other.

QUEEN BEE'S STING—INTERBREEDING—UNFILLED HIVES.

"A DEVONSHIRE BEE-KEEPER" has certainly shaken my confidence in what I said as to the unmistakeability of the queen bee's sting. I could not now persist in the conviction that it was not her mandibles which surprised me, although I presumed at the time the twinge to come from their antipodes. The moment I experienced it her release was instantaneous, but then the insertion of her sting would be instantaneous, and certainly that instrument was not left behind, otherwise I must say her jaw was severe.

The nearest bees to those of the cottagers I mentioned were his Grace the Duke of Marlborough's, about a mile off; mine are nearly two miles away.

Bees would certainly not deteriorate where from forty to eighty hives were kept—their relationship would be so divided with a constant renewal of hives going on. It is where a few only are kept that a depreciation of breed would take place, and only a few hives were kept by the cottager. The old barbarous brimstone-pit system of "taking" the annual progeny was the vogue; and some three or four old, very old, painted straw hives fixed upon the front walls of the house for ornament, were only kept for stock; and what stamina of bees to expect from these I need not explain to "A DEVONSHIRE BEE-KEEPER." Last winter told its fatal tale upon them.

People often exclaim to me, "What fine bees yours are!" and I wish I could procure a swarm of the progeny from "B. & W.'s" Tasmanias, all the way from thence, to cross with them. I am quite sure mine would not become less in consequence. But if I had lived in Tasmania some years, and allowed myself but three or four old skeps to breed from, notwithstanding the ever-so-near vicinity of "B. & W.'s" drones, I should undoubtedly have found my bees become perceptibly smaller than those which I now cultivate.

As to the unfilled hives, everything I write is from my own experience, and three of that ilk were not profitable to me. Why I like my hives to be quite completed in their combs by the autumn is, for the bees to be quite ready for our early sycamore bloom to work the honey in the supers, instead of expending it to complete their combs in the skeps. If I do not make a market of my early honey, the late—viz., the lime honey is seldom of use for that purpose; for here, in fine, hot weather when the limes are in blossom, a dark honeydew is apt to be engendered on the beech trees, which the bees collect and disfigure the sample.—UPWARDS AND ONWARDS.

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* *Anglais*, Trowsers.

OUR LETTER BOX.

CANARIES (*W. M.*).—Your greenhouse will be an excellent place for the breeding cages. These (3½ feet by 1¼ foot by 1¼ foot) are not too large.

AVIARY OR PIGEONRY (*J. H. H.*).—Any of the horticultural builders who advertise in our columns would supply you with a plan, if you send them particulars of what you require.

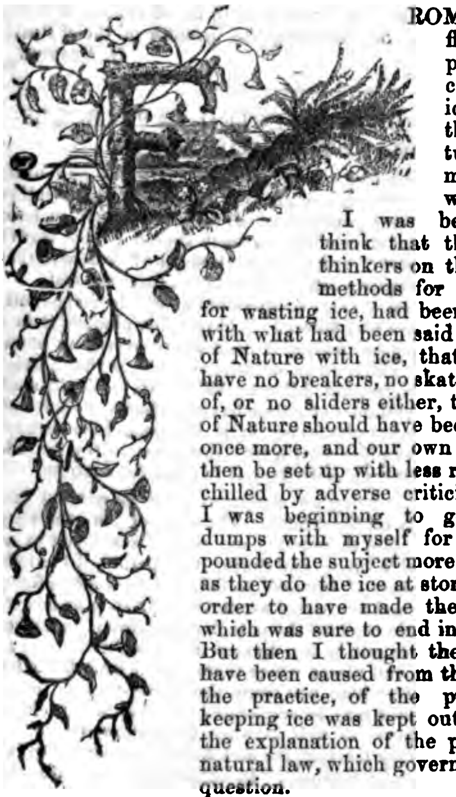
PAPER CLOTHES (*A Constant Reader*).—We never before heard of such manufacture. Collars for ladies and gentlemen are made of enamelled paper at a price cheaper than the cost of washing those made of a more durable fabric; but we do not know any one who would be bold enough to wear a garment made of paper. If there is such a patentee as you say, we [illegible] the lecture?

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	JAN. 28—FEB. 3, 1862.	Weather near London in 1861.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
28	Tu	Jasminum ligustrifolium.	30.200—30.080	56—25	S.W.	·02	47 af 7	40 af 4	36 6	28	13 15	28
29	W	Jasminum nudiflorum.	30.158—30.053	52—26	S.W.	.02	46 7	41 4	9 7	29	13 26	29
30	Th	Phylica ericoides.	30.104—29.989	46—38	S.W.	.01	44 7	43 4	sets	●	13 36	30
31	F	Protea pendula, &c.	30.120—30.000	56—30	S.W.	—	43 7	45 4	55 a 6	1	13 45	31
1	S	Cydonia. [Candlemas Day.	30.255—30.114	56—25	S.W.	—	VII	IV	9 8	2	13 53	32
2	Sun	4 Sunday aft. Epiphany. Purif.	30.618—30.578	50—27	N.W.	—	40 7	49 4	21 9	3	14 1	33
3	M	Acacia urcinata.	30.456—30.209	48—33	S.W.	—	38 7	50 4	32 10	4	14 8	34

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 43.8° and 30.7° respectively. The greatest heat, 57°, occurred on the 1st in 1852; and the lowest cold, 8°, on the 31st in 1857. During the period 134 days were fine, and on 104 rain fell.

PRESERVING ICE.



FROM crossing flowers we pass to a cross on the ice, which is the more natural amusement in the winter.

I was beginning to think that the practical thinkers on the rules and methods for keeping and for wasting ice, had been so chilled with what had been said of the ways of Nature with ice, that we should have no breakers, no skaters to speak of, or no sliders either, till the ways of Nature should have been forgotten once more, and our own ways might then be set up with less risk of being chilled by adverse criticism. I say, I was beginning to get into the dumps with myself for not having pounded the subject more completely, as they do the ice at storing time, in order to have made the impression which was sure to end in printing it. But then I thought the lull might have been caused from the fact, that the practice, of the principle, of keeping ice was kept out of view in the explanation of the principle, or natural law, which governs the whole question.

There is no question of the day, and none of the darkness of night, certainly, in which it is more essential to hold closely to the natural laws which govern and which practically affect the subject of discussion, than the question about the preservation of ice. I did propose to myself that another chapter was necessary for the explanation of the practical application of the rules which we had to deduce from the laws referred to, and so explained. But the ruling passion of the mad craft of crossing flowers had been more powerful with me, and kept me off the ice chapter to this very day. But on this day I had to answer some questions about the practice of keeping ice in stacks out of doors like hay-stacks, or corn-stacks, and ricks, if there is a difference between them. They were short questions from an "Old Subscriber," who is in a young situation, or one which was new to him not long since, judging from the name of the place and the county he wrote from. The ruling passion was still uppermost till the last week's Number of this Journal came in. But just near the answers I had ready on the paper about ice-stacks when that Number of this Journal came in.

Ice-stacks were the next expedients after the failure with ice-houses, and it was not necessary to bring them into the discussion of the causes of that failure. Ice-stacks out in the open air like corn-stacks, being surrounded on all sides by currents of air, keep ice from melting not nearly so fast as where the best attempts for excluding currents have been adopted—that is to say, in ice-houses. In order to understand properly where ice-stacks would be best placed, you have only to consider two simple laws of Nature which refer to this question.

First. *The law of damp*, so to put it. Keep damp as much as is possible from ice, and you have done all that can be accomplished on that law, or side of the question. Keep it also as much from heat as is possible, and then there is no more possibility of assisting the keeping of ice. The law of heat being the second law referred to. Then the question is this—

Is damp more likely to come into a deep, low hollow in a plantation, or under trees, than into an elevated position in the same plantation, or under the same trees? The next question is like it. Is heat more powerful, or greater, in an unsheltered hollow facing the sun, or on a hill side with a south aspect? And the third question is this—Is the heat of the air or sun less on the north side of a hill, or on the opposite; and in which of all the positions does the law which governs the melting of ice—the law of currents in the air, get the greatest play or power to prevent damp, supposing damp to be only ten times more destructive to ice than heat?—that is to say, so many degrees of *damp* heat is only ten times more destructive to ice than just as many degrees of *dry* heat. But in reality the comparison is more near seventy to one than ten to one, and 50° of damp heat will assuredly consume ice more than seventy times faster than 50° of dry heat, provided the air is in free motion at the time.

The whole subject of keeping ice hangs on these few questions. Surely no one acquainted with country life can feel any difficulty in saying in which of the positions stated the sun has less force, and where the winds blow the keenest. The due north of a hill, bank, or building, free from shade or shelter, is where the heat or air has less force for melting ice. But the wind—the source of the law against damp—having most power at the top of a hill, bank, or brae, keeps the ice-stack just so much from the top as will allow the shadow of the summit to pass over the top of the stack, and no more, and you may safely say that is the best place for it, in the eye of science, or in theory: practice must, however, determine how nearly the best place for you or them.

In all this, and in all that I have said about the natural principle of preserving and of wasting ice, I do not, or did not, express a single opinion, except in the very last paragraph about the drain from the ice-house being converted to an air-drain. All that I had advanced was either from natural law, which none can gainsay, or from my own practice, not of a year or two, but of thirty-two years' full practice, and part of the time more practice in one year than some have known in the course of a lifetime. Then, to bring in mere opinions against facts which cannot be controverted is departing from the question.

My good and honest friend, Mr. Robson, is wrong altogether. He first misunderstood the drift of what I said about the natural conditions under which ice is either saved or preserved, and he is out altogether in his own memory about ice-stacks and old sayings on that head of the subject, and I can put him right from a more tenacious memory.

He says ice-stacks were discussed in "Loudon's Gardener's Magazine" as early as 1824. No such thing; the Magazine was not commenced till the beginning of 1826, and for the ten years succeeding there is not a single word in it about keeping ice in stacks; and, writing from memory, I do not recollect that the subject was ever discussed in the Magazine at all. Mr. Robson, however, is a most useful man; for he comes down on us fast Nimrods, and puts on the drag when he sees a steep hill, although he may be "puzzled," as he says he is, on the subject of our gradients. He is as good a gardener as either of us can claim to be, and is as honest a man, and as unassuming too, as ever stepped in shoe-leather, and he always puts his objections free from all personalities—and that is just what I want in my old age the rising race of writers to do on all occasions, no matter under what provocation they may take to the pen way. All the practice, honesty, and fair dealings in this world, however, go but a very short length of tether on the side of any man or subject who or which has no more than the best and most sound opinion to bring in aid of fair discussion. I would not give a Ribston Pippin for the opinion of the best man under the British Crown, if I had the value of a Codlin to set against it from any known principle or law of nature. Indeed, although I shall not live to see it, civilisation is not far from the point at which man will cease altogether from intruding his private opinions upon public discussion—facts and principles must then go hand in hand to solve all difficult questions.

Yet I shall give an opinion without putting more stress on it than is here asserted. I think that I have read every word that was worth reading in the English tongue about keeping ice, and it is my firm opinion the best thing I ever read on the matter was that article on ice-stacks in the last Number of this Journal —I mean that which is headed "An Economical Rustic Ice-Preserver," and signed "W. Earley, *Digswell.*" I never recollect having seen Mr. Earley's name in print, and I have not the least personal knowledge of him, so that considerations of that kind can have no hold on me; but such "considerations" never go with me farther than to prevent me telling a man he was a fool if I thought him so. The whole essence and the secret of all that has been said about ice-keeping are down firm as ice in July in that article, or else I am no judge in the matter.

In the first place, it is the first article in our language in which the great and only fault of the first American way of preserving ice, as explained by Cobbett, is avoided. In the second place, the plan which Mr. W. Earley explains is as a cross-seedling between Cobbett's ice-house and the more recent English ice-stack, and the seedling possesses the good properties of both parents without the faults of either; and in the third and last place it seems to me to show signs of being the head of a new race of seedlings as it were, which, being so round and so compact already, the florists of this cooling fancy will have many generations of seedlings from it ere they can be said to have any improvement on the parent of the race.

Cobbett's ice-house has been all along approved of as the best mode for keeping ice; but it had a fundamental error in it, at least in our climate, and all our English ice-stacks have hitherto been made on a wrong principle; but they, the ice-stacks, were a great improvement on the more wrong principle of the common ice-house. Those who do not know how Cobbett's ice-house was made may now see exactly how it was, only that it was more permanent and more costly than the "Rustic Ice-Preserver" of Mr. W. Earley.

Cobbett put in a long row of posts in a circle, and another row of posts in another circle, 2 feet or 3 feet, I forget the exact figure, out from the first row, and stuffed the interval between the two rows of posts with straw; he also braced, or tied, the tops of both rows with scantling, and he put on a bee-hive-like roof, or say as nurserymen pack hampers of plants, a very conical top, which was very [illegible]ckly covered or thatched with straw. As far as al[illegible]at w[illegible] [illegible]bbett's plan was the v[illegible] [illegible] ; but [illegible] packing [illegible] ce in [illegible] [illegible]ed a [illegible] [illegible]

rough wood and faggots on it. The bed of straw soon rotted from the melting, and, as in the pent-up ice-house, the damp held about the straw much longer than it would without the straw, and the confined air was saturated into the state of vapour—the grand and arch destroyer of ice in all places and climates, above ground or under it, and Cobbett had no means for letting off this vapoured air—no ventilation in fact; all that error has been avoided in the "Rustic Ice-Preserver."

The error in our ice-stack has been the laying of the straw covering on to the body of ice without the shape of the stack being such as to prevent the rotting of the straw by damp. If you could make just a sugarloaf or cone-like ice-stack, and put the first lining of the covering of "drawn straw," as they use it in thatching, and straight on end, the chances of rotting the straw from the melting would be at a minimum, and the rest of the covering might be of tumbled-about straw—or dry leaves, which are still better over a straw lining. But the best plan of all is not to touch the ice-heap with anything whatever, and to have a small opening at the top of the cone to let off vapour, if it ever came. I finish by congratulating the inventor of the "Rustic Ice-Preserver." D. Beaton.

TREATMENT OF NEGLECTED CAPE BULBS—STEPHANOTIS FLORIBUNDA.

I have the charge of a collection of Amaryllids and other Cape bulbs in various stages of growth. They have been rather neglected, and I want your advice as to how I ought to treat them. 1st, At what stage of their growth should I repot them? 2nd, In what compost? 3rd, In what sized pots? I believe that Vallota purpurea requires different treatment from the rest.

What is the lowest average temperature at which Stephanotis floribunda will thrive and flower? I have a fine plant of it in a large pot, and purpose placing it in a house averaging about 50° in winter; but which on an occasional night, perhaps twice or three times in winter, has fallen to 38° or 40°. Would such temperature for a few hours at a time be very injurious to it? and would you advise me to plant it out in the border, as I can do over where the hot-water pipes pass across the house to the far side (it is a span-roof vinery), or to keep it in a pot?—Aliquis.

[Vallota purpurea being an evergreen must be watered and kept growing slowly all the winter. The most of the others are deciduous—that is, lose their leaves and remain stationary or at rest for a considerable time; and during that period, if the pots stand in a temperature of from 45° to 50°, and on a moist floor, they will scarcely need any water whatever. As soon as flower-stems or leaves begin to show the pots may be moved, and, after removing the surface soil, be top-dressed with loam and old cow-dung, get watered, and placed where there will be from 5° to 10° rise of temperature, which will cause the flower-stem to come stronger. Such bulbs may be accelerated just like a Hyacinth, but they seldom flower so well as when thus allowed to come when they like, and by marking the first flowering ones a regular succession may thus be obtained. In obtaining fresh bulbs, the pots may have the least thing of bottom heat to encourage free rooting, but the top of the bulb should be kept cool so that little or no excitement should be given until the pot is filled with roots. To help this at potting, only about a third of each bulb should be covered with earth. Now, as to plants in pots and established, the best time to repot them is after they have done flowering—say a fortnight afterwards, and then give heat, light, and water in abundance, to encourage growth until the leaves begin to show signs of ripening, then gradually withhold water until the pots are placed in their resting-quarters, and if on a moist floor give no more water as detailed above. Brown fibry loam suits them best, with top-dressings of rich compost, and manure waterings after they begin to move; and, lastly, the size of the pot must be in proportion to the size of the bulb and its strength—it is best to err on the side of small pots, as the process of growing is sooner finished. A six-inch pot will grow a fair-sized bulb well. For one almost as large as your fist an eight-inch pot might be necessary, but extra flowering will ever be procured when the pot is rather small for the size of the bulb. In potting established plants cover three-fourths of the bulb.

The Stephanotis will stand very well in an average of 50° in winter, with a rise of 10° to 15° from sunshine. If your house gets often to 38° to 40°, the plant will be sure to die. If merely [illegible] that for a few hours at a time, it might not matter much [illegible] better hardly [illegible] to have it below 45°

We lost a promising plant from the house cooling below 40° for several nights. You would have a better chance than we had by planting it over the pipes as you propose, and you might do something by keeping the plant rather dry in winter. Your plant will have plenty of heat in summer as it gets up the roof.]

CULTURE OF KOHL RABI.

In answer to "Westmorlander," experience teaches that this is much hardier and more certain to yield a crop than any of the Turnip varieties. Of the Kohl Rabi, the best variety is the Purple-topped, and its produce of bulbs is commonly twenty-five tons per acre, and of leaves two tons. One and a half pound of seed produces enough plants for an acre. The seed should be sown in February in drills a foot apart, the seed-bed being well dug, and the soil moderately rich. When the plants are full 6 inches high, in May, plant them out in the field in rows 18 inches apart in the row, and the rows 2 feet apart. The soil should be trenched or ploughed deep as for Turnips, and well manured. The plants must be hoed between occasionally to keep down weeds as well as to loosen the surface of the soil. The leaves may be stripped and given to cows, &c., late in autumn, but it is not a good plan to attempt obtaining a second crop of leaves, as it would, even if successful, injure the nutritive quality of the bulbs. These must be trimmed and stored the same as Swedish Turnips. They remain good all the winter if kept cool, dry, and dark.

VISITS TO FRENCH NURSERIES.—No. 6.

Mons. Cachet, Angers.

In bringing to a conclusion these rough sketches of those French nurseries which I had the opportunity of visiting during my late scamper, I can truly say it has been a labour of love to record the pleasure that I experienced, not only in seeing how things were managed in that country, but also in telling of (not the politeness merely, but) the genuine *bonhommie* and cordiality with which one was invariably received. As I have said before, I have but little doubt but that this was in a great measure owing to my being fortunately under the wing of Mr. Standish, whose hospitality at Bagshot is so well known both by his own countrymen and foreigners; and yet I do think that if one went there with the desire of seeing, as I did, he would experience much of the same sort of kindness.

I do not know that I can more appropriately close these papers at a season when we are watching the opening buds of our Camellias than by a notice of what I must consider the Camellia nursery, *par excellence*, of Europe. A very large word that, it will be said. Yes, truly. And do you leave out all the Belgian ones and the English growers? Yes, as far as I know or can hear, every one of them. The Belgians are rich in small plants, and some English nurseries have very large ones; but for beauty and symmetry I never saw anything to equal Mons. Cachet's. The climate is favourable, and his skill is great, so that one may expect great things, and in this no one, I think, would be disappointed.

I speak of the Camellia as the great feature of this nursery, but there are many other things very successfully done. Ericas, Epacrises, and many other hardwooded plants were in abundance. The pots were plunged in beds, and seemed to be doing excellently. Conifers, also, received a due share of attention, as they seem to do in most of the French nurseries; but the glory of the nursery was the Camellias.

The grounds are somewhat narrow, and are intersected in various places by some high hedges, and in the alleys occasioned by these the Camellias were placed. Plants were there from 8 feet to 12 feet high, every side equally furnished; the bloom-buds well set, and the foliage of that rich glossy hue which so marks the health and vigour of this lovely tribe. While in one of the open spaces stood a noble standard Camellia in the open ground fully 20 feet high; and at the end there was a long house into which the plants were put for the winter, and which must in blooming time be a perfect maze of beauty, and in which was a fine plant of Agave vivipera in bloom, and from which, as it is viviparous, Mons. Cachet had obtained two hundred bulbs; while he seemed greatly to rejoice in a quantity of seed saved from Agave microcantha, these fine-foliaged plants being in much request in France.

It may, perhaps, be interesting to notice (although impossible for us in our cold northern climate to follow it), his mode of culture. The cuttings for stocks are put into pans, and placed in a shady part of the garden without any bell-glass or covering whatever, and here they root in about two months. They are then potted off and placed in heat, where they rapidly make root. During the first year after the plants are worked they are kept in pots; but after that are planted out in the open ground, in a place suitably prepared for them, and here they remain for three or four years, acquiring, of course, great vigour. At the end of that period they are taken up and potted, and are really magnificent plants. They are then placed in the alleys between the hedges to which I alluded, and remain there all the summer, only to be removed into the house to bloom during winter and spring. As far as I could see, the compost used was precisely similar to that we are in the habit of using here; and any remarks on this, or indeed on the mode of culture to be adopted here, are rendered superfluous by the excellent papers now appearing in The Journal of Horticulture from the pen of Mr. Anderson.

We generally find here that the white and light-coloured varieties are more tender than the dark red and rose-coloured ones: and so it is in the open-air cultivation. With regard to sorts I could not discover that there was any great difference of opinion; and that here, at any rate, we and the French are tolerably *en accord*. The larger plants comprise, of course, the older varieties and double white. Imbricata, Princess Bacciochi, Montaroni, &c., abounded. But there was one kind of which Mons. Cachet spoke in the very highest terms as the queen of Camellias, which was quite unknown to me, Master Rosea. It is described as a veined rose, beautifully imbricated, of large size, very handsome foliage, and altogether the very beau ideal of a Camellia. I have asked several Camellia-growers if they are acquainted with it, and they reply No. It was procured, as a great many novelties in this tribe are, from Italy, and does not seem to have reached us yet, though I believe my fellow traveller pretty well took all Mons. Cachet's stock. I should be really obliged if any of the readers of this Journal can inform me whether they are acquainted with it. We shall soon see whether it bears out the glowing descriptions given of it, as the plants purchased by Mr. Standish are rapidly coming into bloom.

By-the-by, why has the Royal Horticultural Society excluded nurserymen from showing Camellias at their Camellia show, save only in single plants? There are several things in the schedule at which, as a florist, I should take exception; although where so liberal a list is provided it may seem ungracious to do so. A great step forward has been made, but even now we florists have to complain. Are we greater growlers, I wonder, than other folks? and are we like the frog in the fable, fancying we are of more importance than we really are?

And so adieu for a season to La Belle France: and with no one better can I close my papers than Mons. Cachet, or with no better place in one's memory than Angers. Our visit there was a bright spot—a time *creta notanda*. I cannot hope to revisit it; but I have visions before me of a run through the Rose nurseries around Paris in June next, with the addition to our party of one of the heartiest Rose-growers in England. If it be accomplished, the readers of The Journal of Horticulture who have been interested in these stray notes shall hear something of it. *Au revoir!*—D., *Deal*.

ICE IN STACKS.

Seeing in this Journal a few weeks since a great deal of writing about keeping ice and ice-houses, most of it written by Mr. Beaton, I was surprised he did not say anything about ice-stacks. As I think he has been very successful in keeping ice in stacks, I should be very much obliged if he would answer the following questions:—Should the ice-stack be open to the wind and the sun, or under the shade of trees and as much out of the way of wind as possible? And if the ice is 2½ inches or 3 inches thick, should it be broken as much as one can, or not?—An Old Subscriber.

[Ice-stacks were the next expedient after the failure with ice-houses, and it was not necessary to bring them into the discussion on the causes of that failure. Ice-stacks out in the open air, like corn-stacks, being surrounded on all sides by currents of air, keep ice from melting not nearly so fast as where the best attempts for excluding currents have been adopted—that is to say, in ice-houses. In order to understand properly where ice-stacks would be best placed, you have only to consider two simple laws of nature which refer to this question. First, the law of damp. Keep damp as much as possible from ice, and you do all that can be done on that side of the question. And there is but one more side to it—the heat side: keep it also as much from heat as possible, and there is no more possibility of assisting the keeping of ice. Then the question is this, Is damp more likely to come into a deep low hollow in a plantation or under trees, than into an elevated position in the same plantation or under trees? The next question is like it:—Is heat more powerful or greater in an unsheltered hollow facing the sun, or on a hill side with the same aspect? and the third question is this, Is the heat of the air or sun less on the north side of a hill than on the south side, and which of all the positions does the current of air get the greatest play? The whole question hangs upon the answer, and surely no one can feel any difficulty in saying in which of the positions the sun has less force, and where the winds blow the keenest. The due north of the side of a hill or bank free from shade or shelter is where the sun heat has less force; but the wind having most power on the top of the hill or bank, keep the stack of ice just so much from the top of the hill or bank as will cast the shadow of the summit over it and no more, and say that is the best place for it. The east side is the next best. Low situations to be avoided; and as in the shade of trees damps come sooner than in open plains, avoid when damp is likely to come. Do not pound the ice, but fill up all hollows and spaces with pounded ice.]

COMPARATIVE COST OF ROOFS FOR LEAN-TO HOUSES.

I happened the other day to be looking over the cost of lights for "houses for the million," and found that for lights 12 feet in length, so as to give ground width of a house 10 feet, the price is for a house 20 feet long £20, or £1 per foot run. This, it must be understood, is for the roof only. As I was on the point of building a lean-to house 60 feet long, I was thinking of ordering the lights above referred to; but on finding that the roof only would cost £60, exclusive of railway carriage, I consulted my carpenter, and asked him for his estimate of a fixed roof, intending to ventilate the house by sliding shutters in the front and back walls. It must be understood that I asked him to give me his estimate for the roof only, that I might compare it with the cost of ready-made lights. The difference is so remarkable that it is, I think, worthy of being recorded; and it will, I think, show your readers how cheaply a lean-to house may be glazed even if they pay more than I have stated.

	£	s.	d
1. 40 rafters, best fir timber, 4½ inches by 1 inch, each 12 feet long, and 18 inches apart, chamfered, planed, painted, and rebate formed by tacking on a slip of half-inch board, 3*d*. per foot, 3*s*. each	6	0	0
120 feet of same for bottom and top of house, 4 inches by 3 inches, planed and painted at 4*d*. per foot	2	0	0
2. 720 feet glass at 2½*d*. per foot	7	13	4
3. Glazing and putty at 8*s*. per 100 feet	2	17	8
Labour in fixing rafters to plates, not morticing but nailing them on	1	0	0
	£19	11	0

By this method of building I have a strong roof with large glass (15 inches by 18 inches) 60 feet long and 12 feet wide for the above sum. To purchase lights ready made to form a roof of the same dimensions, I observe, by referring to advertisements of cheap lights I repeat, I should have to pay £60, and even this is really a low price for a roof 60 feet by 12 feet, compared to old-fashioned prices. But what I wish to point out to your readers is the enormous difference between a home-made roof and lights purchased ready made. I therefore refer them to the above estimate, and earnestly advise all those who wish to build vineries to form their roofs as I have directed. The supporting walls, as must be the case if ready-made lights are purchased, are at the discretion of the builder, and may be either of brick, stone, or three-quarter-inch boards rebated and painted; there is only one thing necessary—there must be sliding shutters for ventilation, both in the front and back walls. In houses built with these cheap fixed roofs Grapes may be grown in a large portion of Great Britain, without artificial heat, in great perfection.—Observer.

SOIL ROUND FRUIT TREES—MANETTI ROSE STOCKS.

All the orchards which I have seen in this county (Somerset) have the grass growing right round the stems, and are constantly fed with sheep and yearlings. The trees apparently do well. Would they be better for the surface being cleared as you recommend "B." last week? What mischief does the grass do? I ask the questions, having an interest in the matter.

I have planted some Manetti stocks to be budded to Roses, many of them have two and three shoots springing from the collar or just above. I shall mulch them with litter to get the bark to run. I want to know if I am to cut back to get young wood, and whether I am to bud the laterals or the main stem? Should not the bud after it has grown be planted below the surface?

I suppose your answer to Apple trees equally applies to ornamental trees, &c., standing on a lawn; if so, what is the plan to hide the bare space? I have forgotten to ask you in the proper place how can I best take out twigs or layerings from the stocks which I wish to bud this year? I have fifty stocks.—Edgarley.

[Beyond all doubt the trees in orchards, whether in Somerset or elsewhere, would be more healthy and less choked with moss on the stems and branches by having a circle about 8 feet in diameter kept clear of weeds and grass by occasional hoeing and forking in a little manure on the surface. Some good authorities think that it would not pay for the doing, but we differ from that opinion. All trees are benefited by the air being enabled to penetrate freely to the roots.

If you bud on unprepared stocks of Manetti you will never be free from suckers. All the buds of Manetti stocks should be cut out below where it is worked when the cuttings are first made. Your stocks are stools, and no stocks at all, and our advice to you is not to bud one of them. They are in their present state a great deal worse than useless for the purpose of budding. Make cuttings of them at once (but it is rather too late), 6 inches in length, and the two top buds only to be left on; cut out all others.]

CHEAP ICE-HOUSE.

Having but recently come to this place where there was no ice-house, I was visited by a neighbour during the hard frost of last winter. He described his ice-house to me; it appeared so simple, that I began, finished, and filled it before the frost was over. I opened it in May, and had plenty of ice daily till October. As it is very easy to make, and inexpensive, I describe it in case you think it worth offering to your readers.

On a steep bank I dug a circular pit, 12 feet deep, and 12 feet in diameter. A drain leads from it to a pond; the end of the drain being below the surface. The part close to the pit is of lead, bent so as to form a trap. The sides of the pit are wattled with hazel rods and fern, or other litter, stuffed between the earth and the wattle as the work proceeds.

Strong rough poles are used to form the conical roof and covered entrance, which are of the usual form. Two doors of larch planks, between which straw is stuffed when the house is filled complete the woodwork, and the whole is thatched 3 feet thick with heather.—G. G. W.

APPLYING LIQUID MANURE TO FLOWERING PLANTS IN POTS.

In my great authority, "The Greenhouse Manual for the Many," I find weak manure water recommended for Camellias this month; and, on the same authority, I have usually applied it very weak to all plants on the first appearance of their flower-buds. Now, in one of your December Numbers I find you giving a charge never to apply it to any plant from September to May. I am generally a successful grower, most especially bloomer, of the common greenhouse plants. I have never lost a

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1. At the present price of timber this is a high charge.
2. Sixteen-ounce glass can be bought at 2*d*. per foot.
3. The "trade" charge this price for glazing only; it was the price paid for that done at the Crystal Palace at Sydenham; and clever fellows, I have heard, could do a "trifle" more than 500 feet per diem. 4*s*. per 100 feet for puttying and glazing is a liberal price.

Camellia; but, although my Azaleas have been most prodigal of bloom, after a year of great profusion I have lost my best plants, although they have been artistically attended to. Do you think this can be owing to the forcing nature of the manure water, or the over-blowing of the plants? I have now a beautiful A. triumphans covered with flower-buds—would you advise my thinning them? If you desire it, I should like to give you an account of my success, as an encouragement to my sister amateur gardeners, although it would be a practical refutation of Mr. Anderson's opinion that fine-flavoured Grapes cannot be produced in the same house with well-flowered plants.—A. Z.

[There is no rule without exception. In the months you name, in fine sunny weather, we would help Chrysanthemums with manure water; we would do the same with Cinerarias and Primulas. In continued dull weather clear water would be as good. We would also give weak manure water—weak, mind—to Camellias swelling their buds; in dull foggy weather we would rather give it weaker still. In the case of Azaleas the manure water should be weak if given at all, and of a cooling nature as that from old cow-dung; very hot manure is apt to injure the plants afterwards. A little rotten leaf mould, or cow-dung three years old, laid on the surface would be safer than much manure water if not weak and cool. Unless excessively thick we would not thin the buds much, but cut all off as soon as done flowering, allow the plant to rest for a fortnight, and then raise the temperature, or take it where the heat is from 55° to 60°, and use the syringe freely to set fresh growth going. We shall be glad of the information and encouragement you offer.]

TREATMENT OF AN OLD WALL INFESTED BY WOODLICE.

THE wall that the Peach, Nectarines, and Apricots are against of which I have the management, is full of large old nail-holes, and the mortar out of the joints 4 inches and 6 inches in a place. There is a vast quantity of woodlice harbour in the wall, the upper part of which wants taking down and rebuilding for about 4 feet, and the lower part pointed. This would make a good job of it, but I cannot get that done. I obtain plenty of good fruit, but, do what I will, the woodlice spoil the looks of half of them. I was going to make a mixture of gas tar and fine-sifted coal ashes, and put something that would mix with it, perhaps oil, to make it to the consistency of whitewash, and get a whitewash-brush and slush it into all the holes and joints; but a second thought struck me, that when hot weather came the gas tar would injure the foliage of the trees. Please give me advice, if that will not do, how I can take proceedings against them? All sorts of trapping I have tried, and shall still follow up; but trapping after the fruit begins to ripen will not save the fruit, for they eat holes at the stalk of the fruit, and there remain in them. There are only a few stragglers to be caught then.—WORCESTER.

[We do not see how you can do well without fresh pointing such a wall. If the tar had been applied early in autumn it might have done, as the smell and ammoniacal fumes would have been pretty well gone before the trees came into bloom and leaf. Now it would not be so, and every spot of tar that lighted on the tree would be injurious, and the fumes would be so too. Even tar, however, would not fill the joints, and the woodlice would get there as soon as the tar was hard and inodorous. The nail-holes might be thus filled; but nothing will do for the open joints at the upper part of the wall but fresh pointing. As a makeshift, the following is what we would recommend:—Get a large pot and a moveable fire near the wall, unnail the trees, and lay them in bundles a little from the wall, wash the wall from top to bottom with water near the boiling-point, injecting it with a syringe or engine into every seam or crevice. That will pretty well do for all live vermin and eggs too. Then make up some limewash with fresh hot lime rather thin, working it from top to bottom, so that it will run into every hole and cranny. This would be too light for the well-being of the trees, as the reflection of heat would be too powerful; but this is merely intended as the ground colour, and for filling all the holes. Then make up limewash of the usual consistence, but to every three parts of hot powdered lime add one part of sulphur, and one of dark Roman cement. This will make the colour much darker, and render it more adhesive. We may consider that after this there will be no sow bugs to speak of in the wall, but there may be at the bottom of it. To prevent them climbing as the weather gets warm, run a brush along the bottom for 6 inches wide with coal tar, and with a fourth of oil in it to keep it moist. Whenever it get dry and inodorous repeat the process, and trap with all enticing things at the bottom of the wall.]

LONGFORD HALL.

LONGFORD HALL, the seat of John Ryland, Esq., is a modern mansion, situate at Stretford, on the great flat of land which commences at Manchester and extends to Altrincham in Cheshire, a distance of nine miles in a southernly direction. This vale is about seven miles broad. The land is in many places light and sandy, producing excellent crops of vegetables, which are grown largely to supply the wants of the citizens of Manchester.

I had occasion to visit Longford Hall a few days ago, to see and have a friendly chat with my old friend Mr. Adams, the gardener there; and though at this dull season of the year there was not a grand display of fruits and flowers, yet I saw so much and so many good points in gardening, that I was tempted to take notes, and am now writing them out for the benefit of the readers of our JOURNAL OF HORTICULTURE. I like to visit a garden in winter, especially a garden like that at Longford, where there is a large quantity of glass-covered structures. The gay conservatories show a greater contrast to the deep repose of the flower garden, and the early-blossoming Vines, Peaches, and Nectarines, &c., give a pleasing expectation of early fruits, whilst the open walls and orchard trees are all in a naked quiescent state.

At this time of the year we do enjoy our greenhouses and fruit-houses a great deal more than in summer, for the simple reason that the plants are in action, giving us the hope of early fruition; but in summer our attention, admiration, and enjoyment are divided almost equally with the out-of-doors productions of a well-managed garden, as with the hothouse department.

It is somewhat difficult in such a large place to choose a good starting-point in describing it. Perhaps the best will be where I entered the long range of forcing-houses. The entire length is 470 feet, divided into six compartments. The gardener's comfortable cottage is at the west end. I wended my way there, and very conveniently there is a door opening from his house into the range of houses. Through that door Mr. Adams conducted me. The first house is for the growth of Peaches and Nectarines. This house, 115 feet long and 15 feet wide, is a lean-to, and had evidently been put against the wall long after the wall had been built. The trees are old, and have suffered greatly from untoward seasons, but since they were covered with glass the wood has improved, and is now thoroughly ripened and thickly covered with blossom-buds, showing the great benefit these trees have received from being covered with glass. The front glass being upright, young Peach trees have been planted near to it, and a trellis made to train them to. This trellis is a segment of a circle, and is not raised too high: therefore, the trees will never shade those on the back wall to injure even the lowest branches. The object aimed at here is to obtain as much fruit as possible from the space covered: hence even the pillars that support the roof are clothed with Vines which have grown remarkably well, but when the Peaches have filled the trellis I think these Vines will shade them too much, and will have to be removed. The next house is a Peach-house, also 120 feet long, and the same width. It is planted similarly to the first, only on the front trellis standard Peaches have been planted by a former gardener; and in order to bring the heads down the long stems are sloped in a slanting direction sufficiently to spread out the branches to the trellis, giving them a rather odd appearance, but they have nearly covered the trellis, and are very healthy, producing, I was informed, very excellent fruit. This house is just started forcing, and the Peaches will soon be in blossom. The adjoining house is a lofty greenhouse put up to break the uniformity of the long range, and is used to force Azaleas and Camellias into early blooming. Passing through this we entered into a large vinery 63 feet long and 21 feet wide. This is a noble house, and is well furnished with healthy young Vines four or five years old. The Vines are all planted inside. A broad walk leads down the centre, with pillars on each side to support the roof. A Vine is planted to each of these pillars, and the roof is covered with Vines, one to every rafter. On several of these there were hanging many bunches of fruit, chiefly Muscats, when I saw them on the 16th of January this year. On the border I observed a considerable number of Figs in pots loaded with young fruit, which will be very early in perfection. Ample means of heating this large house are provided. The hot-water pipes are 6 inches diameter. A double row of ascending pipes with an under return-pipe are laid on short pillars near the front, and a double row at the back. When in full fruit this house must have a rich appearance. The Vines are very strong and healthy, and appear to be quite at home. The front wall is built on arches, which admit the roots to travel outside when they need that extension.

The three adjoining houses, each 50 feet long, are all vineries also, forced at different periods so as to produce fruit in succession; but inside there are pits, which are used for succession Pines. In order to give the rafter Vines their needful rest, they are brought down, pruned, and laid lengthwise close to the front windows, which are kept constantly open, except in very severe frost. To keep the cold wind from blowing in, a second row of lights is fitted up about 15 inches from the real front windows: upon these a long broad-enough board is nailed, and that board forms a very useful shelf to place low plants upon.

Around the Pine-pits there is a walk, and at the back a border in which Vines are planted. To give these a check and a rest they are, after being pruned, brought close down to the border, and whilst at rest are covered with mats; the cool earth and the covering keep them quiescent enough during the winter months. By these contrivances the houses are made almost doubly useful. Pines and stove plants are grown in them all the year round. At the time of commencing to start the Vines the extra lights are removed and the real front lights closed, and then the Vines gradually begin to push their buds, and when sufficiently advanced are at once tied up to the rafters. All the Vines throughout the whole range are pruned on the spur system. The understratum of all soil on the borders of all these vineries being a very thick bed of sand, and that well drained, there is no stagnant water: hence there was no necessity to raise the soil much above the general level; but a gentle slope is given to the border for the purpose of throwing off heavy rain, as well as catching more of the heat from the sun.

This finishes my remarks on the united long range of houses. On emerging from the farthest door we came upon a small propagating-house and a small fernery, both very useful for their respective purposes. At a right angle with the long range, and a sufficient distance from it, there are two houses built expressly for the purpose of growing Melons and Cucumbers. When I was there they both were occupied with the latter in bearing. The form of these houses is a rather steep span roof; I do think a lower elevation would have been better. There is a five-foot walk in the centre, and borders 3 feet wide on each side. In these borders the Cucumbers are planted in the richest soil that can be made; and, in order to supply ammonia to the air, there are troughs fixed on the pipes filled with water and horse-droppings from the stable; the gaseous matter given off not only feeds the plants but keeps down the red spider. There are four pipes to give top heat and others under the borders to give bottom heat. Excepting the sharp angle of the roof I think these the best houses for growing these kind of fruit I have seen. I must also think that more piping for top heat would be an improvement, more especially during the winter months.—T. Appleby.

(*To be continued.*)

CYCLAMEN HEDERÆFOLIUM AND NEAPOLITANUM.

In The Journal of Horticulture for December 3rd, page [illegible], there is a notice of the two Ivy-leaved Cyclamens, C. hederæfolium and C. neapolitanum, the former blossoming in the spring, and the latter in the autumn. I shall be much obliged if you or any of your correspondents will inform me by what [illegible] ers the two species may be distinguished from each other, [illegible] tion to the difference of their time of blossoming.

[illegible] which has always been considered C. hederæ- [illegible] once grow, at Bramfield, in Suffolk, [illegible] nd a [illegible] years ago brough[illegible] plan[illegible] hat localit[illegible] has [illegible] since culti[illegible] garden, [illegible] 860 two [illegible] from the original stock, informing me at the same time that the plant blossoms in the spring, and that he had no remembrance of having seen it blossom at any other time. But to my great disappointment the roots he sent me blossomed in the following autumn, and, passing over the spring, they blossomed again last autumn, and the blossoms and the leaves they produced appeared so like those of a Cyclamen I have long cultivated as C. neapolitanum, and which I believe it to be, that hitherto I have failed to discover any difference between them.

That the Bramfield Cyclamen blossoms in the spring is confirmed by the description of Sir James E. Smith, which accompanies the figure in "English Botany;" but he adds that in a cultivated state it sometimes blossoms in the autumn. This statement, together with my own experience of the roots from the Bramfield stock, has suggested the query whether the two plants are really distinct species; whether the plant which in Italy invariably blossoms in the autumn, does not in the colder climate of England sometimes blossom in the spring. In such cases it may be supposed that the heat of the summer has not been sufficient to form the latent flower-buds in time for their development in the autumn, and that, therefore, the blossoming has been retarded till the spring; and it may be that the roots having acquired this habit generally retain it, or retain it until they are removed to a warmer situation. In his "English Flora," Smith gives April alone as the time of flowering of C. hederæfolium; whilst our more recent Floras, I believe all of them, give the autumn as the only time. Smith does not appear to have known any other locality than that of Bramfield; but a Cyclamen which the authors of our more recent Floras consider identical with the Bramfield plant, grows wild at Sandhurst, in Kent, where, as I am informed by a gentleman residing in the neighbourhood, and to whom, also, I am indebted for roots, it invariably blossoms in the autumn, never in the spring.—Halesleigh.

[There is little doubt that Sir J. E. Smith, Lindley, and Don, all three described in some of their publications the Cyclamen neapolitanum of Tenore for C. hederæfolium proper of Clusius; and there is as little doubt that Tenore, finding their mistake, applied the name neapolitanum to the one which has been universally cultivated in England as hederæfolium, and which is the same as the identical English Cyclamen found in Suffolk and in Kent; but in middle Italy alone, it is said, is where it is quite at home. However, Clusius's original Cyclamen hederæfolium (Cyclaminus hederæfolio verno tempore florens) is said to be as common at Naples as neapolitanum: therefore there is, and has been for some time in England, not only the mistake as to name, but two plants have been confused the one with the other. Our British Cyclamen is certainly the true neapolitanum of Tenore; and if Clusius had not, nearly two hundred years before, named the spring-flowering Cyclamen of Southern Italy hederæfolium, our British plant would have better deserved that specific name. There are only three European Cyclamens considered as distinct botanical species by those who have had good opportunity of studying them and long practice in their culture, and the three are more or less Ivy-leaved. First in order is Clusius's spring-flowering Calabrian plant; the second is Linnæus's europæum, a native of Northern Italy along the Alps; and lastly, this plant of middle Italy, called by Tenore neapolitanum, after Naples, his own town, round which it abounds, and where the northern limits of Clusius's hederæfolium are said to rest.

After they have been long in cultivation they vary much from seed; and as by seeds only they can be increased, their botanical distinctions, which are few, are soon so much blended that the original descriptions would now be of little avail. Neapolitanum is the most varied in the leaves, some being quite as in the Irish Ivies; some have triangular leaves; some are five-angled All these variations are not found on one plant; but the seedlings of any plant of neapolitanum will exhibit these diversities; and there is an irregular broad band of white and purple on the under surface of all the leaves in their different variations The under side of the leaves of the true hederæfolium is plain purple, as in coum, and only marbled on the upper surface, and the bulb is not nearly so strong as that of neapolitanum. I am still without these three Cyclamens pure and simple.—D. Beaton.]

The Isabella Gray Rose.—This beautiful Rose I believe [illegible] flowers until four or five years old. I have one in [illegible] 20th January, only eighteen months old. It is [illegible] beautiful Rose, the perfume (though faint), is like the Sweet-briar. The plant I have flowered was grown in a different manner from the rest. I expect to flower all my plants next summer under the same treatment. If I succeed I shall let you know, and also the way I treat them.—John Angus, *Gardener, Enniscoe.*

CONDITIONS NECESSARY FOR PRESERVING ICE.

I take the liberty of responding to the invitation of your very able correspondent, Mr. Robson, in expressing my views as to the conditions most likely to preserve ice for the longest period of time, and to note a little of my experience in the matter.

It may be remarked in the first place, that ice is simply water deprived of its caloric or heat; and as soon as its temperature is raised beyond a given point the solid state gives way to the fluid. Keeping this well-known fact in view, one would really think that there could exist but very little difference of opinion as to the conditions necessary to preserve water in this cold and solid form. Evidently, this will be most fully accomplished in proportion as we manage to prevent heat from getting at our stored mass of ice; and failure or success will depend entirely on the conducting or nonconducting powers of the medium with which the ice is more immediately surrounded. There may, however, be great difference of opinion as to the best means of securing such conditions as are most desirable.

Most fully do I agree with Mr. Robson's views (as opposed to those promulgated by Mr. Beaton)—namely, that a current of summer air is the most likely thing in the world to get rid of ice at the shortest possible notice. In this respect I remain, as yet, one of the old school. It cannot have escaped the notice of the most superficial observer, that under no circumstances do snow and ice vanish so quickly from our fields and headlands as during the prevalence of a high mild wind; and that frost and snow stick longest to the ground in those "howes and dells," where most sheltered from a current of air. The great capacity of warm air for moisture accounts for this. Every particle of air, as it rushes along in a breezy day, imparts its heat to the snow, melts, and licks up its quota and carries it away. Nor is it conceivable that a current of air, in the dog days, rushing through an ice-house and playing upon the ice, can have a contrary effect.

It has already been remarked that there can be but little difference of opinion as to the fact, that the best way to preserve ice is to keep heat from it. Surely there can be no surer way of defeating one's object than to allow a current of air, with the heat of summer, to pass through the ice-house. Heat may find its way to the ice through many mediums; and depend upon it, Mr. Robson is quite correct in distinguishing water as one of them, and in recommending double or hollow walls; and besides such a precaution, the outside wall should be surrounded with the most porous material—such as pure sand, and the most complete drainage should be secured all round and below the level of the lowest part of the building, to prevent water rising by capillary attraction. Over and above all, and extending beyond the boundaries of the building, there should be a thick roofing of straw, reeds, or heather, or whatever is the best nonconductor and warder-off of wet.

Anything that most effectively prevents heat by the medium of air in currents, water, &c., from getting at the ice must, in the nature of things, give the best security for its safety. I have had experience of two ice-houses standing close to stagnant ponds, and in which ice never kept well; no doubt moisture by capillary attraction was the cause.

I will conclude these remarks by saying, that I would care very little whether an ice-house were at my command here or not. The nature of a large portion of the ground makes me entirely independent of any such structure, and conditions are afforded which I consider first-rate for preserving ice. To explain, I have only to say that there are immense embankments, in and around our woods, of pure sand to a great depth. There are millions upon millions of loads of sand with which we propagate our plants. There is nothing more required than to choose a well-shaded knoll of this sand, and dig a hole in the side of it something like an ice-house. Into this hole you might turn a water-course; it would all disappear as it ran. Here, then, are what I consider conditions most desirable for preserving ice—perfect freedom from anything approaching to an accumulation of moisture, with acres of the same sand around the spot. The ice is put into this pit in the usual way. When filled, there are placed over the ice and round the shoulders of the knoll some 4 feet deep of dry straw, and the whole is thatched over to defy wind and rain. A tarpauling over all would be an improvement; but without such the ice keeps first-rate. Here is a lump of ice surrounded with a dry nonconducting medium, and the result is most satisfactory. In what way would a current of air entering at the base and passing off at the apex improve it?

Previously, little was thought of these sand-knolls for preserving ice; and there was only a little put into the pit to be used before that in the ice-house. Any one at all conversant with ice-preserving principles could easily see that such a position afforded the very best security for stored ice. The pit has been enlarged, and from sixty to seventy cartloads put into it, and it keeps far better than ever I saw it keep in any ice-house, and comes in for our late autumn and winter supply.—D. Thomson, *Archerfield Gardens.*

SOWING ARCTOTIS GRANDIFLORA AND SALVIA PATENS.

A Subscriber would be glad to know the height and colour of the Arctotis grandiflora, what time the seed should be sown, and whether it would look well in a bed with a border of Sweet Alyssum.

And also, when the seed of Salvia patens should be sown to flower in July.

[The average height of Arctotis grandiflora may be said to be from 10 inches to 15 inches. The colour is a light yellow; but the plant is not at all suitable for bedding, only as a good kind to plant on a border of mixed flowers. The spring is the time to sow all plants in general—some few in the autumn, and still fewer at the time the seeds are ripe, be the season what it may. Then the best time of the spring to sow Arctotis or any other seeds which require half-hardy treatment, varies in every place in the three kingdoms, and is done entirely under sheer necessity in nine cases out of ten. In the tenth place the man of the place sows all his seed, of this class before February is out, some of them as early as the first week of the new year, because he has plenty of room under glass to keep the seedlings going, and plenty of men to look after them; and the nine persons out of ten go on severally on the same tack, only so much behind. Each sows as early as his means will determine on to the very end of April, and some have to do the whole without a square of glass from the 20th of April to the same day in May. The best time for every one is to sow on the very day on which his or her room and the garden arrangements will admit of its being done. First consider your ways and means, and sow seeds in January, February, March, or April, according to that good old rule.

The seeds of Salvia patens, to flower in July, should be sown just fifteen months before that July, not one day later. In some places, however, by sowing the seeds in January, and by first-rate work the seedlings, or many of them, bloom in August and September following; but in nineteen out of twenty cases the seedlings are only just showing for bloom as the frost is coming. For all real and useful economical work, Salvia patens ought to be sown as a biennial in May to bloom the following year.]

IVY EDGING FOR FLOWER-BEDS.

My employers have been travelling lately in France, and in the gardens of the Louvre and Tuilleries they have seen some beds edged with Ivy. Can you inform me if it is the common Ivy, or what variety it is they use? Also how it is planted, and what is the after-treatment.—Worcestershire.

[Your employers had no need to go to Paris to see the common Ivy planted as flat edgings, in-doors or out of doors. Our own nursery reporter explained the plan in these pages six or seven years back, and he highly approved of the plan, which is as old as any of our readers.

Mr. Weeks, the celebrated one-boiler-system man, was the first person, we believe, who made Ivy edgings; and any one may make them any time of the whole year, but the end of April would be the best time. Any kind of Ivy would do, variegated as well as green; and plants from 6 inches out of a coppice, to 10 feet or 12 feet from a nursery in pots are equally good for the purpose, and the training and trimming are just the same as for Mangles' Variegated Geranium.]

MANGLES' VARIEGATED GERANIUM.

I AM very glad that Mr. Smith gives us hopes of some day possessing a gold-edged Geranium, with all the good properties of Mangles' Variegated one. Somehow Mangles' Variegated has been one of my greatest favourites, if not the most favoured one of all, for a great many years. True, there are some now possessing a more clear white margin, and with a more robust constitution, keep better through the winter; but there are none that grow so quickly and cover an allotted space so soon as this one, and few people complain of having too much of it, that I shall be glad to hear of its free-growing qualification being transferred to one of another hue. Flower is a secondary consideration in a Geranium like this, and, in fact, is so in all variegated Geraniums; for, with the exception of Brillante, I do not know of any variegated one that does not look better without flowers than with them, while Brillante is the most profuse bloomer I have, but its grey-looking foliage seeming in the distance neither variegated nor plain-leaved, is much against it for effect.

What I admire in a variegated Geranium for bedding purposes is not what I believe florists have been endeavouring to attain. I like a leaf as deeply tipped as well can be with pure white, but at the same time it ought to wrinkle, and its edges turn upwards in a cup-shape, and not reflex and turn downwards as most of the plain-leaved ones do, and also many that are esteemed as variegated—as, for instance, Alma, which though possessing a broader margin of white than most others, nevertheless neutralises it very much by the edging turning downwards instead of pointing up, thereby showing the central or plain green part most. I admit there is some merit in Geraniums of this class when viewed as potted plants, or as close under the eye as these plants usually are. This is not the main thing that is wanted in bedding plants; but as I have before stated my views on bedding Geraniums, I will not go over the matter again, but will simply say that I shall be glad to hear of a gold-leaved Geranium having the free-growing qualities of Mangles' Silver-edged one being to be had; and I do not despair of an energetic, patient, and persevering cultivator accomplishing this, and whether this fact be accomplished by seed, or subjecting a plant to such treatment by application of some chemical liquid as will induce it to assume the required hue and become permanent that way.

I may also say, that though Mangles' Variegated Geranium rarely produces seed, yet it sometimes does so without artificial impregnation. The first time I observed it doing so was in 1852 or 1853, and the seeds seemed perfect, but I do not remember the result. I have on hot seasons seen it produce occasional seeds, but it is a shy one that way. Neither are seed-pods wanted in the flower garden, however useful they may be to the raiser of new varieties; but I shall be anxious to know the particulars of any case which tends to alter the foliage of a Geranium or anything else; and if the plant in question be induced to put on a yellow jacket, I see no reason why other kinds should not do so likewise.—J. ROBSON.

BLOOMING TOM THUMB GERANIUMS IN POTS.

RAISING BEDDING PLANTS FROM SEED.

I SHOULD be glad to know what sized pots Mr. Fish refers to in speaking of his four profuse-blooming Tom Thumb Geraniums (Dec. 17, page 235). I am intending to purchase a dozen or two young Tom Thumbs this spring, which will probably be sent to me in small pots. In order to promote free blossoming, should they be left in the same pots this season, or at once put into those in which they may remain "a dozen years?" Our soil is a strong heavy clay, in which all plants grow to leaf more than to flower, and are apt to be distressingly rank and luxuriant: therefore the pot system would be especially desirable if moderately small pots would do.

Would such seeds as Lobelia, Cineraria, Petunia, Phlox, &c., likely to germinate if sown in pans at the end of February, and kept in a room the temperature of which is seldom under 50°? [illegible] strong [illegible] plants for bedding in May or June, but [illegible] managed? In the room referred to they would only have a gleam of sunshine late in the afternoon. Would a lower temperature with a great deal more sunshine suit them better?—FYLTONIA.

[Mr. Fish's plants spoken of are in 14 or 15-inch pots, and are about 4 feet in height. You must not think of such pots for a number of years, or you would neutralise the object you have in view. Suppose you get your plants in March or April in small pots, you might when established give them a shift into five or six-inch pots if they are strong and bushy, and less if they are not, doing this a fortnight or three weeks before turning-out time. That size will be quite large enough for bedding purposes. When you want a few extra large for staring centres, or to make a fine mass as introduced specimens, then you may gradually give them larger pots; and when they come to stand in from eight to twelve-inch pots they will not need repotting for years. Even those in six-inch will do several years without repotting if carefully kept and fresh top-dressed. But for the expense of pots and extra care afterwards in dry seasons, a more brilliant mass of bloom would be produced from Scarlet Geranium-beds if the plants are plunged in their pots.

We should sow all the seeds you name in light sandy soil, a little moist, and but slightly covered with white sand and a little very fine soil in it—say in the first week of March, and place them in the warm room, covering each pot with a square of glass, or a piece of thin paper or glazed muslin—the glass would be the best. As soon as the seedlings in a pot appeared move it close to the window, and give a little more air by raising the glass a little on the side next the light. When more want getting to the window, remove the first, now growing and partly hardened, to the cooler and lighter room. That, however, should range from 40° to 50°. Here they will gradually get more hardened off, and when large enough must be pricked off rather thickly into other pots. It will be as well in the case of Lobelias to prick off in little patches, and not to trouble with individual plants. In fact, this may be done with all, each patch containing some half-dozen plants, and these may again be divided as they become larger and can be more easily handled.]

METEOROLOGY OF 1861 AT FROME.

THE past year came in with tears, and the first few hours of its existence it was subject to the wind. Having recovered this slight indisposition, it buckled on its armour and asserted its iron-bound authority, though not with the severity of its predecessor, nor more than the season required to keep things in a healthy state. From the 20th it was unseasonably mild. February came in mild, and continued so the greater part of the month, and with rain two days out of three kept the land wet, and amongst the plants of bedding stuff damping-off was very prevalent, although the wind was blowing hurricanes most of the time. March came in with its well-known characteristics—hail, wind, and rain; and although the atmosphere was mild, owing to a continuance of rain the earth was too cold for the well-being of vegetation. Rain fell on the three first days of April, afterwards it was dry and warm with two exceptions. On the whole, the weather was all that could be wished for, and rapid strides were made both in art and nature. May came in dry and mild, and many that were pressed for room (self included) put out bedding plants and all seemed to go on well till the 8th, when about 2 inches of snow fell, with the thermometer gradually lowering till it reached 33°. Fortunately it remained there, but everything in the shape of protection was laid hold of and made the most of, so that nothing suffered. There was considerably less than the average of rain, which proved an advantage to the crops generally. The low and wet lands did not recover from the past summer and winter till the end of the month. With the exception of a few blighting winds June was a favourable month for vegetation. Up to the present time the crop of hay bids fair to be a light one on poor and low lands. The quantity of rain that fell was somewhat below the average, but being distributed over eighteen days, and not falling in heavy storms, almost every drop was available. No symptoms of the Potato disease are yet visible.

July, as a growing month, was of the very highest order. Seeds with all the complaints came up well and flourished. The weather was not so favourable for haymaking as could be desired, yet there was a good deal of hay put together well. Rain fell on twenty-four days, but in many instances only in slight showers, and often in the evening or night, and, there being [illegible] good drying breeze most of the time, soon put matters to right for the day.

August was the warmest month, which is not generally the case. The nights being warm, the ripening process made rapid strides. The harvest good, and the prospect of a cheap loaf appeared reasonable.

Although the average temperature of September was 10° lower than the previous month, and nearly four times the quantity of rain fell, yet nothing could be more seasonable, for both the grass and the root crops, with almost every other crop, had begun to feel the effects of the dry, warm weather of August. The earth being thoroughly warm it sucked up the rain as it fell, and vegetation grew with a rush. There was very little variation in the day and night temperature, and only one frost during the month.

October, as a whole, perhaps its equal may not have been in the memoryof man. There was not a single frost during the month, and the fields were as green and the flowers as gay as in the month of September. The temperature has usually decreased from 5° to 6° from September; but in this instance it has only decreased 1° on the day temperature, and the night temperature averaged 2½° higher. Nothing could be more favourable for the maturing of the summer's growth for the next season.

The month of October having been a summer month in temperature, the foliage had scarcely received a tinge of its autumnal beauty and splendour when November entered upon its duties, which have been more varied than usual, and of a most determined character. The tempest and the storm have been at work on sea and on land, and have left many melancholy mementos of their track. Rains have fallen to a greater extent than during any previous month during the year, and with the earth saturated with moisture the monarch of the icy regions issued his despotic mandate, and in the dead of the night asserted his iron-bound authority over the length and breadth of the land, crushing and withering the first faint gleams of autumnal beauty at one fell swoop into winter's cold embrace. The dull, foggy days so characteristic of November, have been but few, which is some little compensation to the gardener for an excess of rain and the severity of the frost of the 18th and 19th.

December, on the whole, has been seasonable and favourable, as being exempt from snow, and rather less than the average of rain; and although the frosty nights and a prevalence of north-east winds were favourable in keeping vegetation in a state of rest, they were very searching to tender constitutions.

1861.	Highest day temperature.	Average day temperature.	Lowest night temperature.	Average night temperature.	Number of days rain or snow fell.	Amount of rain in inches.	Number of frosty nights.
	°	°	°	°			
January	49	35	18	29	8	0.70	18
February	50	43	18	34½	18	3.10	7
March	58	47	27	36½	19	3.0	8
April	61	52	27	34	5	0.65	5
May	78	59½	29	42½	10	1.65	3
June	78	67	45	51½	18	2.88	...
July	70	66	46	52½	24	3.32	...
August	75	67½	45	52½	16	0.95	...
September	67	57	32	43	15	3.16	1
October	64	56	35	45½	15	1.70	...
November	52	39½	14	30	19	4.36	21
December	49	38½	17	32	9	1.70	18
Total	...	...	...	...	176	27.17	81

—The Doctor's Boy, *Frome, Somerset.*

HEATING BY A HOT-AIR STOVE.

After reading Mr. Beaton's plan of constructing a stove for a greenhouse by hot air, I was induced to try if I could make it answer in a small one attached to my garden, which is about 15 feet by 8 feet. The mode I proceeded upon was this—I built first the fire-place, which is about 15 inches wide by 2 feet long, arching it with firebricks and setting the bricks with fireclay; I had all these bricks cut to a "templet," so that I had no trouble in setting them. After finishing the arch I grouted it with a thin liquid of ground fireclay and water, which filled every crevice—that is, supposing any to have been left after setting. I afterwards covered it—that is, the arch, with a layer of sand whilst the liquid was wet: this appeared to make an excellent finish of it, and I feel assured that this arch is as tight as though it was one solid arch of fireclay. I next built a brick wall on edge on each side of the fire-place 6 inches distance, then a nine-inch wall all round 6 inches from the other side walls. The chambers between these two walls I conducted the smoke through, the flue commencing at the farthest end of the fire-place to the right, passing between the brick-on-edge wall and the outer wall, then by the front under the ashpit, which is, by-the-by, 2 feet below the surface; again between the brick-on-edge wall and the outer wall to the left of the chamber, at the farthest end of which I placed the chimney. I began to be afraid of this answering at first, for there was no draught; on lighting the fire the smoke preferred coming out of the door-place to travelling so circuitous a route. I persevered with it, and as the flues gradually became dry, so gradually one perceived the draught to improve, which is now excellent when the damper is open. By conducting the smoke in this way I think you get as much heating surface as Mr. Beaton will with his glazed-tile piping traversing the interior of the chamber, which I greatly approved of, but was afraid they would not stand the required heat, and which might be liable to breakage in the joints. Two well-jointed flags cover in the air-chamber, which is 6 inches from the top of the arch to the underside of flags. Is this capacity sufficient to keep up a continual supply of hot air? for at times, especially in very windy weather, there is a back-draught into the chamber. My stove is built 3 feet from the greenhouse, so that I have to communicate the hot air through a sheet-iron tube 9 inches by 3 inches, which I found lost a great deal of heat by being exposed to the atmosphere; I remedied this by covering it with a thick felt, three-quarters of an inch, and covering the latter with a wooden box. The tube on entering the greenhouse is continued at right angles nearly close to the front window to the centre of the house; over this tube I have placed a Waltonian Case, which I supply with hot air from a three-inch upright tube (out of the main tube) which goes into the aperture intended for a lighted lamp. I find that by this means I get a temperature of about 60°, which I should think would be sufficient for raising tender or half-hardy annuals in, or for striking cuttings, &c.; the case has no water in its tank. I have not tested its efficiency, but have no doubt of its answering well.

In the interior of the air-chamber I have placed an iron vessel containing water, about 12 inches long, 3 inches broad, and 3 inches deep. Will this be sufficient for keeping the air moist enough, or will it be too much if water is kept constantly in it? I supply the water by an iron tube through a hole in the flag which covers the chamber.

To what use would you put the top of the chamber outside? the flags being kept at a good heat as long as a particle of fire remains; they are 6 feet by 4 feet. Would you cover them with glass?—T. M.

[You have made a capital job of it; and now you might have a two-light frame over the flags for a warm pit, the flags to be in the very centre.]

NEW AND RARE PLANTS.

Phyllagathis rotundifolia (*Round-leaved Phyllagathis*).

Nat. Ord., Melastomaceæ. *Linn.*, Octandria Monogynia. Called also Melastoma rotundifolium. Native of the moist woods of the interior of Sumatra. Another of the justly popular beautiful-foliaged plants. Leaves above, deep, rich, glossy metallic green, tinted partially reddish; beneath bright red.—(*Bot. Mag.*, *t.* 5282.)

Rhodanthe Manglesii *var.* sanguinea (*Blood-coloured Mangles' Rhodanthe*).

Nat. Ord., Compositæ. *Linn.*, Syngenesia æqualis. Native of Western Australia. "The present variety, whether mixed with the species or kept separate will prove a very valuable introduction for ornamenting our flower-beds."—(*Ibid.*, *t.* 5283.)

Begonia Kunthiana (*Professor Kunth's Begonia*).

Nat. Ord., Begoniaceæ. *Linn.*, Monœcia Polyandria. It has also been called B. lucida and Gaerdtia Kunthiana. Native of Venezuela and Caracas. "Few species exceed this in the richness of the colour on the under side of the leaf, contrasting well with the dark glossy green of the upper, and in the size of the flower."—(*Ibid.*, *t.* 5284.)

Dendrobium triadenium (*Three-knobbed Dendrobium*).

Nat. Ord., Orchidaceæ. *Linn.*, Gynandria Monandria. Introduced by Messrs. Rollisson, of the Tooting Nursery; supposed to be native of the Malay Archipelago. Flowers white slightly tinged with pink. Blooms in September.—(*Ibid.*, *t.* 5285.)

VERTICORDIA NITENS (*Glistening Verticordia*).

Nat. Ord., Myrtaceæ. *Linn.*, Polyandria Icosandria. Called also Chrysorrhoë nitens. Introduced by Messrs. Veitch, from Western Australia. Flowers yellow, in a dense corymb. Blooms in August.—(*Ibid.*, *t.* 5286.)

VRIESIA XYPHOSTACHYS (*Dagger-spiked Vriesia*).

Nat. Ord., Bromeliaceæ. *Linn.*, Hexandria Monogynia. Believed to be from Brazil.—(*Ibid.*, *t.* 5287.)

BOLBOPHYLLUM BARBIGERUM (*Bearded Bolbophyllum*).

Nat. Ord., Orchidaceæ. *Linn.*, Gynandria Monandria. Native of Sierra Leone. More curious than beautiful.—(*Ibid.*, *t.* 5288.)

PRUNING THE RED AND WHITE CURRANT.

THE directions for forming the Gooseberry bush apply equally to the Currant, and its management as to pruning is much the same. It produces its finest fruit upon the young wood, and it is therefore essential to keep up a succession of young bearing shoots, as the fruit is less good when produced on branches which have borne for several years. The fruit is much improved in size and colour by shortening the young shoots after midsummer, leaving no more foliage than can perform its proper functions, and fully exposing that which is retained to enable it to do so. The Currant is a valuable auxiliary to the dessert when grown upon a north wall, and for this purpose may be trained vertically and spurred-in.

THE BLACK CURRANT.

The form in which this tree should be trained is similar to the preceding, but as its fruit is borne principally on the young wood it is necessary to leave a larger proportion of such shoots at the time of winter pruning. The rule may be to have as many as can be exposed without shading or crowding each other. The Black Naples is the best to grow. The Black Currant does not grow so stiffly as the other sorts, and its branches are more liable to break down when laden with fruit. We find it advantageous to support a few of the branches with short stakes, upon the principle that prevention is better than cure. Fruit is also produced upon small spurs on the older wood; but as these are not abundant, dependance must be placed on the young wood principally. This is more apt to produce suckers than the other kinds, and therefore, the formation of the cuttings must be carefully attended to. We are not aware that any other form of growing it has been tried, excepting the bush with open centre.

THE RASPBERRY.

The fruit of the Raspberry is produced upon suffruticose stems, which spring from the ground either in the same or the previous year. In most of the kinds it is produced upon lateral shoots, which are borne by the previous year's canes. This fruit shrub differs from others of its class in the stems not being persistent, but only of annual duration. They are of an herbaceous rather than a shrubby character. The object of the cultivator should be to get these annual shoots as strong as possible; and, as a multiplicity of suckers are thrown up by all the kinds (but the true yellow Antwerp, which propagates with great shyness), they must as soon as they can be seen be reduced to two or three shoots, which are to form the canes for next year's crop. Care must be taken to secure them from the action of the wind by securing them to stakes, and whenever the preceding year's crop of fruit is over, the removal of the old canes will be an advantage to the young ones. Two or three canes may be tied to a single stake at the distance of 5 feet each way. This distance may startle the amateur, but where it can be given it is a decided advantage; and those who cannot afford so much must bend to circumstances and do with less. At the time of winter pruning the points of the shoots may be shortened a little, and fresh stakes put to them, which completes the process for the season.

The formation of the flower-buds may be retarded, and a late [illegible] of fruit obtained by cutting down some of the shoots to within two or three eyes of the ground. New and vigorous shoots will be produced from the eyes, which will not form their fruit till later than the others, and thus the season o[illegible] desirable fruit [illegible] much prolong[illegible] The double bearing [illegible] [illegible] would hav[illegible] [illegible] alterna[illegible]

stools cut down to two or three eyes annually. They will thus give fruit almost till Christmas in mild seasons. The finest fruit is in all cases produced upon the strongest and best-ripened canes. Full exposure is therefore necessary to obtain these, and single rows will, on this account, always be found most productive.

THE FILBERT.

A well-managed Filbert should have a clean stem about 2 feet in height, and be free from suckers. The branches should radiate from this central stem, and assume a basin-like form. Its maximum of height should not exceed 6 feet. Filberts in Kent (a county famous for their cultivation) are generally planted as rooted suckers, which are left to grow uncontrolled for two or three years, and then cut down—a vigorous shoot results, which must be headed to the desired height, denuded of its lower buds, and only three or four shoots encouraged to grow to form the foundation of the future head. These must be shortened again at subsequent prunings till the required number of branches is obtained, introducing a hoop into the head, and regulating the distances of the main branches by means of it.

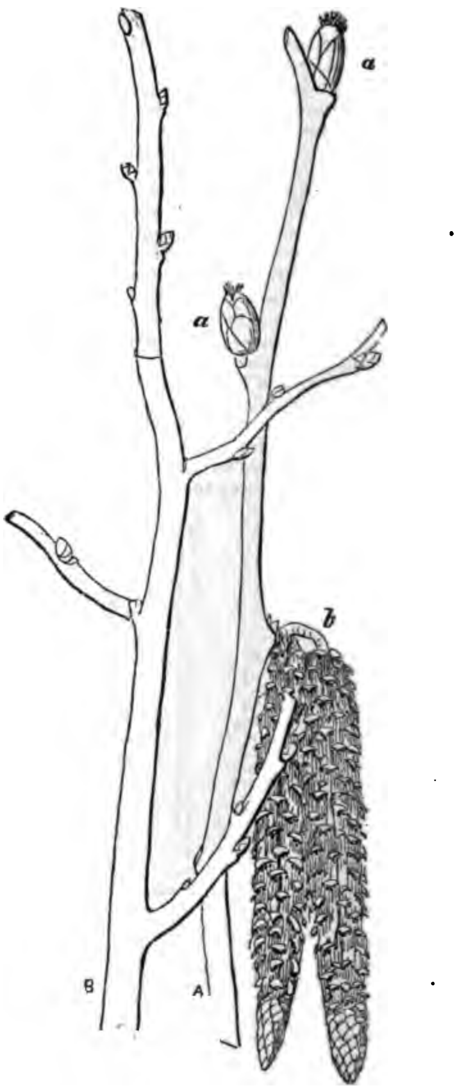


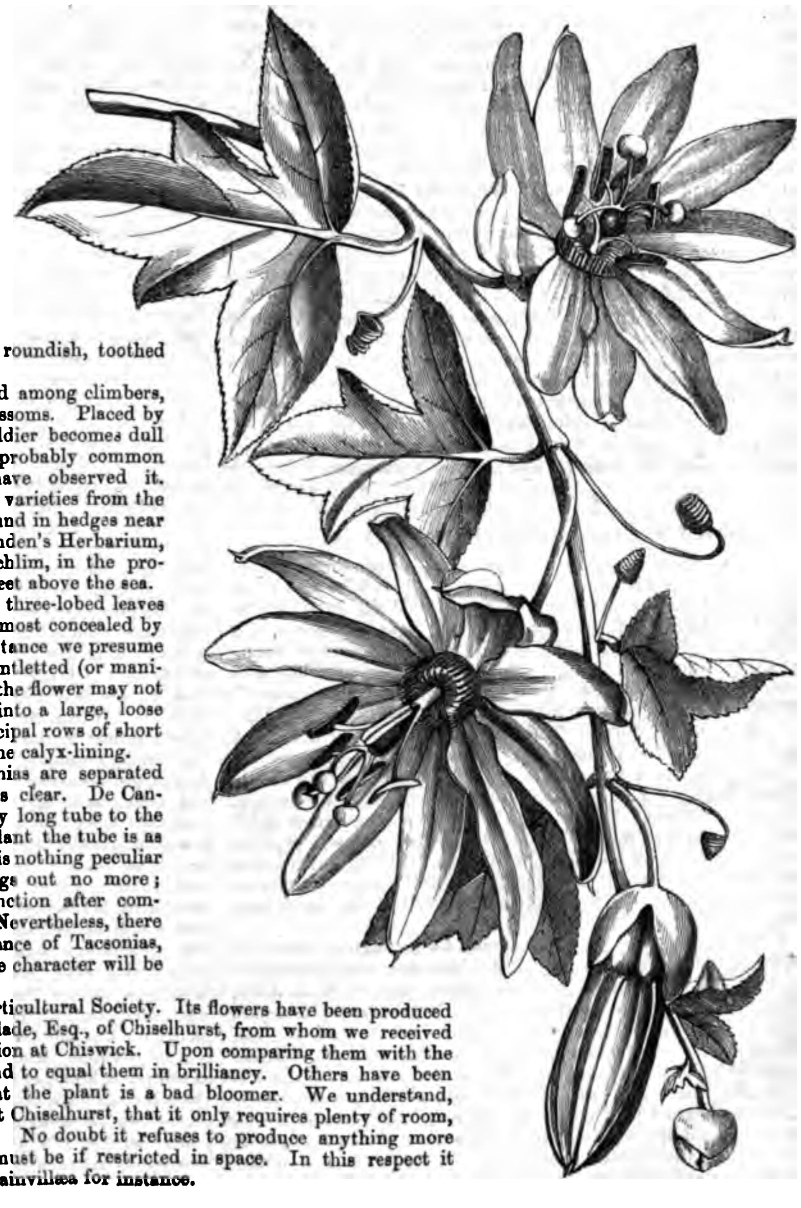
Fig. 8.

The fruit of the Filbert is produced upon the upper part of young shoots, and upon small branches which spring from the part at which the shoots of the preceding year were shortened. The male blossoms (catkins) are produced separately from the female ones (*fig.* 8 A represents a shoot in which *a a* are female flowers, and *b* the male ones). In pruning, care must be exercised to leave a sufficient supply of these male blossoms for the fecundation of the female ones; and therefore the trees should not be pruned till early in the spring, when their development is obvious. A crop of the fruit is often lost for want of attention to this; and it has been found by experiment that where a tree has itself been deficient in the supply of these, the cutting them from other trees, and suspending them over the females, has resulted in producing a good crop. The pruner must therefore insure an annual supply of these small productive twigs.

In the third year the last year's shoots left to form the head of the tree, will make lateral shoots, which must be suffered to grow during the season, and cut back to short spurs, from which the future bearing-wood is destined to spring. The leading shoot must also be shortened two-thirds of its length to insure its breaking regularly, and keep it full of spurs. The subsequent management consists in shortening the young leading shoot, and cutting out old and barren wood, so as always to have a succession of young, healthy, and fruitful twigs. When the trees become too large every other one may be cut back to within 6 inches of the stem from which they spring; young shoots will again put forth, which must be treated in the same manner as the young tree. *Fig.* 8 B represents a bearing branch from a Filbert bush which has been pruned.

It is the practice to plant Apple trees and Hops in Kent with the Filberts, but in our opinion light and air are of as much consequence to Nuts or Filberts as to other plants. We are accustomed to see the Hazel grown under a direct canopy of umbrageous timber trees; but should we not get larger returns if underwood were grown in one plantation and trees in another? and would not single rows of Filberts, minus large Apple trees, be more productive, and yield fruit of a larger size and better quality under the influence of light and air, than they do when overwhelmed by a dense canopy of foliage? — H. Bailey, *Nuneham*.

TACSONIA MANICATA.



Such frequent reference has been made to this plant recently in our pages, that we think its portrait, history, and description will be acceptable.

It is of the *Natural Order* Passifloræ, and Monadelphia Pentandria of Linnæus. For the following notes we are indebted to "Paxton's Flower Garden," where a coloured drawing of this species may be seen:—

The Gauntletted Tacsonia.—Bracts entire, united at the base, downy, longer than the tube of the calyx. Leaves downy on the under side, smooth on the upper, divided below the middle into three serrated lobes. Leafstalks with several glands. Stipules roundish, toothed in a crested manner.

We believe this species to be unrivalled among climbers, for the brilliant scarlet of its gorgeous blossoms. Placed by their side, the red coat of an English soldier becomes dull and pale. It is a native of Peru, and probably common there, for many botanical travellers have observed it. Humboldt and Bonpland brought some varieties from the city of Loxa; Hartweg says that it is found in hedges near that place; and it forms No. 1294 of Linden's Herbarium, gathered by his collectors, Funck and Schlim, in the province of Merida, at the elevation of 7000 feet above the sea.

It forms a rambling climber, with grey three-lobed leaves and large scarlet flowers, whose tube is almost concealed by three downy bracts, from which circumstance we presume that Jussieu give it the name of the gauntletted (or manicate); it must be owned that the tube of the flower may not unaptly be compared to an arm thrust into a large, loose glove. The coronet consists of two principal rows of short violet teeth planted on the green tube of the calyx-lining.

Upon what precise ground the Tacsonias are separated from the Passion-Flowers is by no means clear. De Candolle relies upon the former having a very long tube to the calyx, and a scaly coronet; but in this plant the tube is as short as in any Passion-Flower, and there is nothing peculiar in the coronet. Meisner's analysis brings out no more; and it is impossible to gather any distinction after comparing Endlicher's prolix descriptions. Nevertheless, there is something very peculiar in the appearance of Tacsonias, and we trust that in time a real distinctive character will be discovered.

The species was introduced by the Horticultural Society. Its flowers have been produced abundantly in the conservatory of A. F. Slade, Esq., of Chiselhurst, from whom we received specimens on the day of the June Exhibition at Chiswick. Upon comparing them with the finest colours there, nothing could be found to equal them in brilliancy. Others have been less fortunate; and it is understood that the plant is a bad bloomer. We understand, however, from Mr. Ansell, the gardener at Chiselhurst, that it only requires plenty of room, when it soon becomes loaded with flowers. No doubt it refuses to produce anything more than leaves when pruned much, as it must be if restricted in space. In this respect it behaves exactly like other climbers—Bougainvillæa for instance.

FLOWERS OF TACSONIA MANICATA.

A few weeks since one of your contributors claimed half of Mr. Beaton's donkey for having flowered the above gorgeous climber. He says, I think, it was like Tacsonia mollissima. I write now from memory, not having the Number of THE JOURNAL OF HORTICULTURE at hand; but it occurred to me at the time that your correspondent had never seen T. manicata, and I fear there are many others similarly circumstanced. No doubt they have bought plants for manicata, and some have bought seed for it; but I know many have been disappointed, and I fear many more will be, especially if they have a bloom like T. mollissima.

T. manicata was first flowered at Kemnel House, — Slade's, Esq., by my friend the late John Ansell, the collector for the first unfortunate Niger expedition under the patronage of His late Royal Highness Prince Albert. It was a plant received from the Horticultural Society, and planted out in one of the conservatories, and allowed to ramble and attach itself to the wires near the glass at the top of the house, allowing its laterals to hang down in festoons. There it flowered in 1848 or 1849, I cannot remember which of the two years the first time, but the flowers are not the colour of those of mollissima, but are a gorgeous intense orange scarlet—shall I say more intense than a Tom Thumb Geranium? Well, if not surpassing it they are equal to it, if petal was laid on petal. There is as much difference between the two kinds as between an old scarlet coat which had once belonged to a private soldier, but is now found covering some poor wretched mendicant, and the new bright scarlet coat of the Colonel of the regiment, while the rays which are almost black increase this intensity. The bloom is about the size of Passiflora cœrulea, and is an ordinary greenhouse creeper, but must have room to grow the current season like a Banksian Rose and will flower the next; but the pruning-knife must be kept away from it except to cut back the points or unripened wood of the lateral growth ere the spring growth commences. But where to obtain it true I know not. I called at Kemnel a few days since; but found it had grown out of bounds, as Mr. Eyres, the present gardener and steward informed me, and was cut down and thrown away.

Messrs. A. Henderson, Pine Apple Place, correctly described it in their catalogue of 1851, and no doubt it might be obtained of them, or of the Messrs. Rollissons, true; but whoever wishes to have the best of all the Passifloras, the most gorgeous greenhouse climber, have it warranted true, and not mollissima, plant it out in a mixture of loam, leaf, or vegetable soil, and sand, with good drainage, let it have room to grow one year. They may then claim the donkey's half fairly.—NICKERBOR.

"JOHN'S GOT SOMETHING TO SAY!"

VARIOUS are the salutations which this exclamatory title will call forth—from the growl of the bilious "Well, say on!" to the humourous invitation of the gentle "Well, John, let us hear." "John's got something to say!" was the speech of a bright-eyed girl to her father on the approach of their young gardener, who was coming towards them, evidently big with some momentous subject. "Th-th-there's some Mushrooms!" (John stammers a bit, poor man.) "Good," says his master, "let us look at the curiosity." They all tramp off to the little back shed where the bed is made up. John very gingerly uncovers it, and points to a little white speck or two about the size of a pin's head. "Yes, so there are; scarcely ready for getting, though." "N-o-o," brings out John with a long-drawn sigh." "Ah, well! never mind—it 'll be bigger to-morrow," says the master; but I don't see any signs of more." "Oh, but there is, there will be—there 'll be oceans, millions!" (John's temperament is sanguine, you 'll perceive,.) "Well, John, we'll keep straight with them."

A few days pass over; then a week—a fortnight. John has kept out of his master's way. At last they meet down the garden-path face to face, and the master says, "Well, John, what's become of the Mushrooms?" "W-w-well, (John goes hrough a bewildered pantomime with his hands and fingers), ou see, sir, it growed capital at first, and then the little beggar begun to look sick and browny, and at last when I touched it fell off;" and John looks intensely disgusted at the impotency of the little agaric. "That was only one, John; where are all he rest?" J[illegible] begins to hold his head down, and probably [illegible] 'sh he ha[illegible] so positive. "I don't know" [illegible] [illegible] let us look at h[illegible] master says. They look at it. "What made you water it, John?" "Why, I thought it wanted it." "I don't think it ought to have been watered, John, but we 'll see." So he looks up every authority in THE COTTAGE GARDENER, from Messrs. Errington and Weaver down to Messrs. Fish and Robson; and they all maintain that the bed should be rather dry than wet. These are all shown to John, who spends nights and nights reading at the kitchen table with a phalanx of volumes before him. He sits the picture of dogged perseverance with elbows on the table, his hands on each side of his head, his fingers thrust through his shaggy hair, and he reads, till, on rising to prepare for bed, he looks so bewildered that his fellow-servants burst out laughing, and jocosely inform him that he is about ready for ——, the nearest lunatic asylum. But, however, there are fruits from this close application, for he determines to try again, and informs his master next morning that they 'll have some Mushrooms yet. The master, full of the milk of human kindness, and knowing that "the best-laid schemes o' mice an' men aft gang a gley," smiles, and hopes they may.

John makes up his bed this time of horse-droppings that have been thrown in a heap and heated to let off the rank smell and to sweeten them. Before, the bed was made up of horse-droppings that had lain thin in a shed and dried a bit, but never allowed to heat. He beats it firm with a mallet, puts in the trial stick, determined that he will steer clear of the rock of fire; because, has he not read "on no account are you to spawn till you are satisfied that the heat is declining?" The bed is made 10 inches to 12 inches thick. John feels the trial stick every day, and at last pronounces it "all right." He spawns it, covers up with some strong soil, beats it firm, and, as he gives the finishing stroke with the back of the spade, he apostrophises the bed—"There, my boy, you'll do now." John's excited imagination sees innumerable dishes of Mushrooms from his pet bed. He switches about his work whistling and singing; and on meeting his master walking in the garden with a friend, he cannot contain himself, but, in defiance of etiquette, he salutes them enigmatically with "Th-there'll be some now!" The master smiles, and the friend says, "What marvellous exploit is John up to?" It is explained to him, and, being a fellow of infinite jest, he relishes it. Poor John afterwards remembers with remorseful feelings his impetuosity; for the gentleman, whenever meeting him, very dryly says, "Well, John, how about the Mushrooms?"

Kind reader, do you not see the point of the query? John's pet bed, after waiting weeks and weeks, showed no signs of bearing. He goes to his master, and, scratching his head, ruefully exclaims, "We 're done again, sir!" "No Mushrooms yet, John?" "No, drat the Mushrooms. What 's to be done now, sir?" "Oh, don't give in, John; try again." And so John goes back to his authorities, and digs in the horticultural field right heartily. He at last discovers what he considers the grand secret—that he let the heat fall too low before he spawned. He communicated this to his master, who said, "Well, John, you must mind that next time. You'd better tell Henry to save you some droppings." So John goes to Henry, and excitedly shouts out, "Henry! save us some *good* droppings—droppings that 'll grow Mushrooms, and don't give us any of your common stuff!" "If you 're not off I'll ——." The rest of Henry's speech is lost by the rapidity with which John vanishes out of the stable, slamming the door behind him. Henry saves the droppings, however. They are spread out and dried a little; and John made up another bed, spawned when the heat was from 75° to 80°. His confident swagger has left him; he makes it with much fear and trembling; and when spoken to about it, he "*hopes* there 'll be some this time." Six weeks pass over; then, to John's inexpressible delight, the bed becomes speckled over with Mushrooms in miniature, which speedily develope into a size fit for table. To see him carrying his first dish in was a sight you would not soon forget. John remembers the lesson, and when visitors come he simply explains his way of making a bed:—"Get your droppings, spread 'em out, turn 'em over a time or two; and then when you think you've got plenty for the bed put them in, the newest and dampest at the bottom. Either tread 'em or hammer 'em till they are as solid as a brick. Make it 10 to 12 inches deep—for, don't you see (here John's voice becomes impressively mysterious), it's almost impossible for it to get above 80° or thereabouts? So when ou 're sure as it 's about that, make holes in it 9 inches apart; reak your spawn about as big as a walnut, soil it down 2 inches, and [illegible] Americanism that John often uses—

is the interpretation of the words "all correct;" spelt, in Yankee slang, "orl korrect.")

John cannot quite forgive the backward-in-coming-forward spirit of his charges; for he concludes, irreverently alluding to them in his choice vernacular, "Mushrooms *is* rum beggars!"—WAIT.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THIS department should now be in a state of preparation to receive the spring crops, and every spot of ground to be now trenched or dug. *Broad Beans*, make a sowing in boxes or pots, to be afterwards placed in some warm house or pit. At the same time a crop should be planted in the open ground where it is in good condition. *Carrots*, make a sowing of Early Horn on a slight hotbed, either to succeed the former sowing recommended, or to come in for a first crop. Where the soil is light and dry a sowing may be made on a south border. *Onions*, those who are short of old ones, or who wish to grow some to a large size, should now sow some White Spanish in a box, to be placed in heat. The underground sort to be planted now in the open ground. *Peas*, sow in pots or boxes for planting out in March; sow two crops also in the open garden, one of an early sort, the other of any approved sort which does not come in so quickly. *Radishes*, sow another crop in a frame where there is a little bottom heat, or they may be sown where early Potatoes have been planted; a crop should also now be sown on a south border.

FLOWER GARDEN.

See to bulbous plants, stir amongst them and protect if necessary. Look over and correct the general outlines of ornamental plantations. Break into all straight lines, form bold recesses when space will admit, and endeavour to produce picturesque effects.

FRUIT GARDEN.

Continue pruning and nailing wall trees. Weed Strawberry-beds and fork up the soil between the rows, but not more than 8 inches deep. Destroy all suckers that may have made their appearance in Gooseberry-plantations, and finish making new plantations where required.

STOVE.

Shake out and repot, and place in bottom heat, some Clerodendrons in variety to grow on for specimens, and to take cuttings from for young stock; likewise Aphelandras. These plants delight in light fibrous loam in a rough open state, a good portion of charcoal both amongst the soil and for drainage, and a portion of coarse sand; and, when the pots are full of roots after their first shift, they enjoy a liberal supply of clear liquid manure. Some of the Orchids which are commencing growth to have a little water applied around the inside of the pot, as the collar of the plant is very susceptible of injury from wet. As the days lengthen and light strengthens more heat and humidity may be applied. Reshift any of the Orchids that may require it, making use of fibrous heath soil. Set traps for woodlice and cockroaches.

GREENHOUSE AND CONSERVATORY.

The degrees of heat to be applied to these structures will depend in a great measure upon the state of the external atmosphere. If high cold winds prevail, little or no air to be admitted, as sufficient in boisterous weather will force admission through every nook and crevice. Place suitable trellises to the Tropæolums that are not already furnished, and pay attention in due time to their proper training. Ericas to receive attention as to water, and also a free circulation of air. Epacrises, Correas, Polygalas, Acacias, &c., will now begin to bloom freely, and, consequently, require frequent attention in watering. The Acacias when in bloom require a liberal supply. Young vigorous plants of Polygala, Muraltia, Pultenæa, Oxylobium, Dillwynia, Eriostemon, Chorozema, Hovea, Leschenaultia, Pimelea, &c., should have all their young shoots stopped in due time. Clear off all dead and decaying flowers from Camellias almost daily; and should any plant throw out a strong shoot, it is advisable to stop it, so as to produce an equality of strength in the wood and regularity all over the plant. Any early-flowering plants that require removal from the conservatory to be introduced into the forcing-pit, stove, or any other structure where there is plenty of heat to produce young wood. Any nice compact plants of Scarlet Geraniums, which are intended to make specimen plants for vases, baskets, or single specimens on the lawn during the summer, should now be shaken out of their pots and repotted in fresh soil. Give them, if possible, a gentle bottom heat for a week or two until they make fresh roots, and keep a moderately moist atmospheric temperature of from 45° to 50°. After they have established themselves remove them to a light airy part of the greenhouse, to be repotted into large-sized pots or tubs in April, and with the ordinary attention given to such plants they will become splendid plants by June. Apply air daily and freely in favourable weather to all free-growing Pelargoniums, and when the flower-buds can be felt on the early plants occasional applications of clear, diluted, tepid manure water to be given. Let every plant have sufficient growing room, and stakes to be applied in due time to those that require them. The varieties of Kennedya, Zichya, Hardenbergia, and Gompholobium to be furnished with suitable trellises, and to be timely and neatly trained. The Cinerarias, if under-potted, or have been standing near the heating apparatus during the late severe weather, must be sharply looked after, or they will soon become smothered with green fly. Fumigate them in time, and assist those which are coming into bloom with a little clear liquid manure once a-week.

FORCING-PIT.

Introduce bulbs, Roses, Pinks, American shrubs, Lilacs, &c., in steady succession. Keep up a bottom heat of 75°, and an average surface temperature of 60° at night and 70° by day, with air occasionally. Keep a watchful eye daily over every article, or some kind of vermin will quickly deprive you of the Rose-buds, Pinks, &c. Slightly fumigate often, and occasionally apply small quantities of flowers of sulphur in a diluted state with a brush to the pipes when cold, but never apply when the pipes or flues are hot.

PITS AND FRAMES.

Should the weather prove open, begin to water slightly such plants as appear to be suffering from want of moisture. Pick off all damp and decaying leaves. Fumigate with tobacco, but the operation requires great care and discrimination, if the plants are infested with green fly. Pot off the autumn-struck cuttings of Scarlet and Ivy-leaved Geraniums, Fuchsias, and Verbenas from the store-pots where there is sufficient room, and where there is bottom heat to excite the roots gently into growth. But where these advantages are not to be found, an increase of stock can be made from the store-pots of Verbenas, Petunias, Heliotropes, &c.; by introducing a few of the choicest sorts into some warm, light situation in the houses or pits at work to furnish an abundance of cuttings for striking in a one-light frame made up of well-prepared fermenting materials, which are to obtained in most places. W. KEANE.

DOINGS OF THE LAST WEEK.

THE changes of the weather have rendered the *general doings* mere work of routine to keep all right, and beyond that the operations have chiefly been confined to three things; there having been a minimum of labour, as respects cold pits, &c., as the covering put on on Friday remained untouched until Wednesday, except a slight fork-over of the litter on a particularly frosty morning, to break the line of radiation and conduction. On Wednesday morning, there being signs of a heavy fall of rain, the litter at all dry was removed into a shed for further use, as its protecting power depends so much on its dryness, and we are obliged to economise the material.

The first job, then, was wheeling soil and manure where needed, and carting soil to the lawn to place round some of the Pinus tribe planted on mounds, so as to give them more feeding ground, having removed the turf before the frost set in. The turf will be replaced as the weather moderates.

VINE-BORDER.

The second job was wheeling out old soil from the back of a vinery, for 6 feet or 7 feet in width, and 2 feet or more in depth, which had once grown Peaches, when Vines were planted, so as to go over the roof thinly. Since then the Grapes, being the most valuable, were allowed to monopolise the roof too much for the Peaches; and having been cropped extra heavily, it is the intention to plant Vines at the back, so as to relieve those in fruit to a certain extent, and then the front ones may also be gradually renewed. The part of border thus made can be raised a foot higher than before, so that after drainage, a layer of concrete at the bottom, and some 9 inches of rubble covered with litter and fresh leaves, there will be about 20 inches to 24 inches of fresh soil, which, as it is open and turfy, will sink considerably. The concrete we expect will get so hard that roots will have a job to get through it, even though it be not more than 3 inches or so in thickness. We have several inquiries how to make such concrete in the best manner, and, therefore, some of the minutiæ may be acceptable. The great essentials to success, then, are fresh-burned lime, and the reducing that lime by breaking to a fine powder, so that there shall be no little lumps, for each lump will be apt to fly afterwards, and make holes alike for roots and water. We only had a quarter of fresh-burned lime for the purpose, or we would have laid the concrete a little thicker. The space was about 40 feet in length by 7 feet in breadth. The bottom was beaten firm, and then a layer of gravel was placed over it a couple of inches thick, and also beaten down firm and level. With a deeper coating of concrete that would not have been required.

Now to the concrete making. The lime was emptied on the dry floor of a shed and broken with heavy wooden mallets, passed through a fine sieve, and the refuse broken again. Whilst this was going on some rough sandy gravel was sifted through a one-inch sieve, to exclude all the stones that did not pass through. The lime when sifted made four large barrowloads. Each of these had five barrowloads of gravel added to it, and mixed well with spade turning, then water was added to mix it still better into mortar, and as quickly as possible put into a barrow and wheeled to the place, and spread and levelled at once, beating it level with the back of the spade. Then the second barrowload of lime was brought and mixed in a similar manner, and so on with the rest. Where nicety is required, and the necessity of making the most of the lime, much of the success will depend on the thorough mixing and laying the concrete down as quickly as possible: hence one barrowload at a time is better than more. If the gravel has much earthy matter in it, three or four parts will be enough to one of lime. When it is sandy and flinty, five barrowloads may be used. If the sandy matter is soft and red, there should not be so much used. If this were done the concrete will smoke and set quite hard. It is best to err on the side of having plenty of lime. We have known lime used that had been kept long enough to pulverise thoroughly, and thus become mild from exposure. We have also known fresh lime slaked with water to powder it before being mixed with the gravel; but in neither case is the process to be depended on so much as done as above stated—namely, pounding the fresh lime, reducing it in its hot dry state to powder, and giving no water until the powdered lime and the gravel are mixed together.

ICE-STORING.

The third operation was ice-carting. We missed the first chance, because it was unadvisable then to disturb the covers and thus disappoint a shooting-party, and this all the more readily, as we believed we had a stock pretty well for another year. I perceive that our friend Mr. Robson has taken the opposite view from Mr. Beaton, and in their hands I will be content to leave the discussion. Meanwhile I so far agree with Mr. Robson as to the advisability of double walls, with a body of still enclosed air between them. So done, I knew of one house built above the ground that kept ice very well—better than those do generally that are sunk in the ground. The ice-well here was so sunk and built with double walls, I believe; but before I had anything to do with it the inner wall was removed. Now we always find that the ice keeps best above the level of the door-sill, and lower than that it gradually melts all round the sides—no doubt from the heat of the surrounding earth heating the wall, and which I believe a body of air between the two walls would so far prevent. At least, I have proofs that such close double walls above ground alike keep out cold in winter and heat in summer.

Again, without entering on the discussion as to the effects of dry air though warm, and air saturated with moisture though comparatively cool, there can be no question that such muggy air, though cool, will melt the ice very rapidly, and frequently when opening ice-houses a dense fog has come rushing out almost as thick as comes from a washing-house when trays and boiler are in as full operation as the hands and tongues of the washerwomen. Now, if we could get rid of this light air so saturated with moisture, I believe we should just so much prevent the melting of the ice; but whether the ventilation should be continued at the top, or only at intervals, my experience does not enable me to decide. Again, in the ice-tubs we have, though well closed, the ice always melts round the sides, though protected with wood and cork, good nonconductors though they be. However, not to enter on the matter, I should like our friend, Mr. Robson, to modify the proposed experiment of ice in boxes, not to pierce the sides and tops full of holes, for that would be extreme, but to fill one box within 4 inches of the top, and close then as close as may be; fill another the same, having a small hole on each side near the top, and a small hole in the centre of the lid, and a covering in each case of a two-inch-thick felt nonconductor above the ice, and the option of opening these holes, especially after muggy weather, at pleasure. This would be tantamount to having an air-pipe in the roof of an ice-house, with a small opening in the doorway, and having the surface of the ice covered with a foot of dry straw. For the purpose of ventilation, as I understand the argument, the object is to substitute dry air for moist, but to keep that dry more-heated air from acting at once on the ice. But, except for getting rid by some means of this foggy dense air that will accumulate in ice-houses from the sides getting heated, I would join with Mr. Robson in keeping the house as much from the external air in summer as possible.

In addition to Mr. Earley, Mr. Burton, of Hatfield, could give approval to ice-stacks, as that is the only means used there for a large consumption. I know that there the plan answers admirably.—R. F.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Permanent Labels for Fruit Trees (*F. A.*).—We find zinc labels written on with the appropriate ink, as durable, and more legible than any other. They should be attached to the trees by flexible zinc wire, now made for training purposes. If copper wire is used, the galvanic action excited by the contact of the two metals causes rapid corrosion. If the labels have a hole at each end, so that they can be tied steadily to a branch, the wearing away by friction is avoided, which is very considerable when the labels wave freely by the wind.

Mice and Crocus Bulbs (*F. W.*).—The only mode we know of protecting Crocus bulbs from mice is by covering them 2 inches deep, and 4 or more inches wider than the patch or line of bulbs, with finely-sifted coal ashes. As soon as the Crocuses have grown well above the soil the ashes might be removed, for then the bulbs have become unpalateable to the marauders.

Propagating Achimenes (*J. Oxon*)—The best and easiest way is to depend on the tubers, and grow them separately; this is generally adopted with old kinds. To make the most of new kinds, start the tubers by placing them in sandy peat and loam, with a little leaf mould, and give them a bottom heat of 80°, and a top heat of from 60° to 70°. As soon as they are 3 inches high, take off 1½ inch and strike by cuttings, and thus, before May, you may have hundreds of plants—in fact, propagate as you would do a scarce Verbena. Next season you will have so many tubers that you will not need cuttings.

Lifting Roots of Fruit Trees (*C. J.*).—In root-pruning, most likely some large tap roots have been left uncut. Root-pruning does not tell so much on very old, as upon younger trees. In lifting, the best plan is to take care of all the roots; in picking the earth from them carefully; and cutting none if it can be avoided, except such as cannot be traced out from going straight down, which may as well be neatly cut through, as such roots will produce sappy wood instead of fruit-buds. When the tree is thus taken up, level the ground and plant within 6 inches of the surface, and, if not necessary to remove the soil, place some fresh all round the roots, which should be regularly spread out and packed. This will effectually check rampant growth, and if in a few years they get too rampant again, disbudding and root-pruning will keep them in order.

Arrangement of Vines (*A Constant Subscriber*).—From your list we should select—*For the early-house:* 1 Dutch Sweetwater, near the fire-place; 1 White Frontignan; 1 Black Frontignan; 2 Bowood Muscat; 2 Black Hamburgh. *For the late-house:* 1 Black Hamburgh; 1 Mill Hill Hamburgh; 1 Muscat Hamburgh; 1 Old West's St. Peter's; 2 Lady Downes'.

Flowering Evergreens (*J. S. B.*).—Kalmia latifolia, Double Furze, and Escallonia rubra are dwarf and will do very well for facing your borders of taller evergreens.

Artificial Manures (*E. Talbot*).—Write to Mr. Purser, London Manure Company's Office, 116, Fenchurch Street, and ask for a copy of the pamphlet

raining Bottom Heat (*Pontefract*).—We can hardly tell you without ss section. If you take pipes underneath the bed from the present , it would not do well to have the pipes in the bed on a lower level. If boiler is below the level of the bottom of the bed there need be no ulty; you might take pipes direct from the boiler and return to it, and rse the bed with them as you liked; and an air-pipe at the highest would make all right, that air-pipe with the open end standing higher the bed. For anything we know, you may take the pipes from those giving top heat; but bear in mind the water will have an objection to nd, and never should go so low as the boiler. If the boiler is low gh, you could take the flow-pipe to an open cistern, and from thence pipes for bottom heat and top heat on different levels, provided none low the boiler.

anting Box-edging (*B. H.*).—From the middle to the end of April is the best time in the year to remove, divide, and transplant Box- gs. But we have planted Box extensively for edging during every n in the year.

ving Lobelia speciosa for Edging (*Idem*).—Lobelia speciosa seeds in March will bloom as early, the same summer, as most of the bedding iiums; and Lobelia speciosa is certainly the best of them all for gs. But last spring there was not one-quarter of the seeds which were s that Lobelia true, probably from the bad seed-harvest preceding.

stroying Wireworms and Ants (*E. C.*).—There is no mode of ef- lly destroying the wireworm but by paring and burning a spit depth e surface. Ants may be driven away from a border by watering it the ammoniacal liquor from a gaswork, two or three times weekly, they give up the contest. At the same time be assured that they do stroy the Rose-buds. The destroyer of these is some grub or aphis, ie ants are attracted by the extravasated sap.

tious (*W. H. Hipp*).—Plant the Raspberry canes in any open part of garden, and mulch well over the roots. A south border could be better yed. For annuals, &c., for your windows, buy our "Window Gar- g for the Many;" it would occupy more space than we can spare to ll the directions you need. The seeds you sent are of the common sty or Moonwort, Lunaria biennis. Sow them now; they will grow iere, but, being biennial, the plants will not bloom until next summer.

ting Trained Wall Fruit Trees (*G. J. R.*).—It has been an old very bad custom to cut back trained fruit trees soon after they were om the nursery and planted. No plan could indeed be worse. A few from the tops of the shoots of some of the Peach and Nectarine trees the pruning they should have the first spring after they are planted; lums, Cherries, Pears, and Apple trees should have no cutting at all if were trained plants. Apricots the same—save, perhaps, a top shoot nd there. But a far worse practice than even this is yet pursued in t all the British nurseries about cutting back maiden or first-year hs of Peaches and other stone fruit trees. The effect of such cutting is lay the foundation of disease and death in the tree at the end of the rst season of its growth. Next June after budding is the right time , not cut, all trees which gum—not next winter after a full season's h is made.

ting Gladioluses (*Some one whose name is lost*).—Now is a very ime to pot a dozen or two of any or out of all the sections of Gladiolus. ery end of February would then be the proper time to pot a second lot ds, and the first week in April the last lot for the season, and all the lots to come into bloom in succession before the same kinds would out of doors from a general planting of them about the middle of

But Gladiolus is so accommodating that anybody without a square of nay pot just as many of them as his or her means will allow, as early first day of January every year of a lifetime, except when the 1st of ry falls on a Sunday, when the potting must be done on the 2nd of the ,or on the last day of the old year. And it is quite as safe to pot Gladio- t the beginning of January as at the beginning of the next succeeding onths. The January-potted ones will then flower first if earlier kinds t potted in February, March, and April. When Gladioluses are thus they like good, rich, free soil, not quite so strong but fully as rich as t pot Geraniums. The soil ought to be neither very wet nor very dry, e pots ought not to get a single drop of water till the leaves are full es long; but then recollect the soil in the pots all this while must not xposed as to get dry to want watering—for if the soil does get drier pots than it was at the time of potting, of course it must have a little and, of course, also, that is a bad plan and shows negligence. us-pots ought to be plunged in or covered up with something damp; e something might then be thatched out of doors, or preserved down cellar till the leaves show themselves, then to be brought to light and t about them for having been done so scientifically in the dark and at nall cost. Liliums—that is, Japan Lilies, to be potted from the 1st of No- to the last of February, and to be done exactly as these lovely Gladioli.

odendrons (*Edith*).—The old-established white dwarf Rhododen- andish's Mont Blanc, crimson or crimson scarlet Blandyanum, and sh Rhododendron the Gem, are all three of the very best of their ive colours and at low prices.

es of Plants (*Amateur, Co., Tyrone*).—1, Polystichum angulare, batum; 2, apparently Lastræa æmula; send a whole frond. The top ond is most unsatisfactory for identification. No. 1 looks to be a y well-marked form; but the same remark applies to this also. *W.*).—It is impossible to name the garden varieties of extensive from indifferently-grown flowers damaged in the transit. You will likely to identify them in some neighbouring nursery. No. 3, seems olvillii; No 5, a self-coloured bloom of the double-striped; and No. 9, flower of Chandlerii. The others are not in a recognisable state. *S.*).—1, Thamnopteris australasica; 2, a form of Pteris hastata; llia dissecta; 4, Asplenium fragrans. (*A Young Subscriber, Teign-* —1, Pilea serpyllifolia, sometimes called the Burning Bush, some- ie Artillery plant; 2, Francoa sonchifolia; 3, Calceolaria violacea.

TRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

r 29th and 30th. **Ulverston.** *Secs.*, Mr. Thos. Robinson and Mr. en, Ulverston. Entries close January 18th.

ry 5th and 6th. **Liverpool.** *Sec.*, J. T. Lawrence, 3, Cook Street. s close Jan. 21st.

February 7th and 8th. **Nantwich.** *Sec.*, E. H. Rhodes. Entries close Jan. 25th.

March 1st. **Halifax.** *Sec.*, Mr. J. W. Thompson, Southowram, near Halifax.

May 14th and 15th. **Taunton and Somerset.** *Sec.*, Charles Ballance, Esq., Taunton.

June 4th and 5th. **Beverley and East Riding.** *Sec.*, Mr. Harry Adams.

CHRISTMAS POULTRY MARKET.

(*Continued from page* 344.)

The poultry salesman's difficulties amid this crowd of consignments for Christmas does not end with the Turkeys and Geese; it is the same in fowls, the same in Game. Piles of everything lie in all directions, and although all may be sold to one man, yet every account must be sent separately, and must be a correct one. There is only one clue to the labyrinth—it is that in every package of goods there is a note stating the contents, and whom they are from. This is carefully filed, and any remark necessary to be made is made on the back of it. It will be imagined how clear but how full a man's head must be with a hundred different accounts in it. To perform his duties properly he must be a thorough judge of the value of the stock he has to sell, and to enable him to perform them easily all his customers should be judges of the same. But, alas, for his temper and for the dispatch of business, it has always been the habit to bargain for goods, and while one man, however extensive his dealings, can make his offer, and buy or leave the goods in a moment, another, who is a purchaser of comparatively nothing, gives him no peace. There can be only one salesman, and he is often beset with customers. "How much six score of Geese?" "A penny a-head more on the fowls." "Give me the price of that row of Turkeys." "Any fresh Pheasants?" "Bate me two shillings per head." Such is the life of a salesman during the greater part of the Christmas week. He can get on well with all but the man who offers a penny a-head. He is what is called a close buyer.

It is a work of time for him to lay out a few pounds, and when he is not within 3*s.* per head of the value he begins at his penny. Such a one is continually snubbed by the salesman, and loses the goods he is trying to buy; but nothing will alter his plan. The next plague to a salesman is the retail buyer, who comes armed with a wife, two children, and a large blue bag. After handling a dozen Geese, he asks the price of one; and on being told by one of the salesman's men, that if he wants to buy a single one he must go to the doctor's shop round the corner, he becomes indignant, insists on seeing the master that he may complain of the rudeness of his people, and when he is civilly told to go along about his business, he does so, muttering something about the "times" and the "public." Leadenhall Market during Christmas time cares for neither. But look at those two men. Both are better dressed than salesmen or poulterers. Both have rings on their fingers. Both are smoking. They are known to the salesman. One is a publican, he wants 400 Geese; the other is a friend of his; he is connected with the club, and as he knows everything, he is, of course, a judge of Geese. They have two things to accomplish; they must please the eye and satisfy the hand. The Geese must be good-looking, and they must be heavy in hand. Now, these are really good customers, buyers of a large quantity and ready-money men; yet they suffer the usual fate of all buyers at Christmas, and cannot ask any great attention. Yet they do not come here to take their chance. They have bespoken their Geese weeks agone, and they know where to go for them. Now, they ask for them, and are directed to the end of the shop, where the shutters are left up to enable packages to be piled against them. The two topmost have each a bunch of white feathers tied to their handles; and they are told if they will open them they will find their Geese. They venture very mildly to ask if they cannot have them brought down, and are told "yes, if they can find a place to put them." At last they are obliged to climb up and begin unpacking; and then it is amusing, for those who have time, to watch the unpacking one by one. Weighing, first by holding up by the neck, then by lifting on a flat hand. Now the cute look that speaks of a lumpy bird, then the shake of the head that tells of a light one; and at last they are bought and taken to a cart.

Then there are men who come to London only once at this time, although they are constant senders. They forward their goods about six days before Christmas, and follow them personally two days afterwards to have a holiday, to see the market, to take "the account and money." Such a man has promised his wife to be home by the mid-day train, and having money to take, he brings only enough to pay expenses up. At ordinary times the salesman recognises him, shakes him by the hand, and has the account and money ready, although the goods have been but an hour or two in London. Now, he does not know the market, every place is choked up; lots of people, but all strangers, are moving about. He can hardly find his salesman, and when he does, he is surrounded by a dozen people, all pulling at him and asking him questions. At last he gets a word with his foreman, who tells him he don't think his goods are come. He knows they are; they came by night train three nights ago, and he saw them off. At last he is told to look among the sixty or seventy huge crates, hampers, boxes and barrels, that contain the unpacked goods directed to *his* salesman. His face is a perfect picture when, at the bottom of the largest and heaviest heap, he finds his hamper, and "he'd just like to know whether Mr. Brown means to sell it, or whether he don't; and if he don't, why he'd just take them to somebody as would, and that's all about it." But there is no such somebody; all are full, and wo'n't be bothered with a stranger's goods. Then the truth gradually breaks on him as it does on other people in different circumstances. Just as he finds the market will go on, and Mr. Brown will have plenty to do without his hamper; so people discover in everyday life that the world is of more importance to them than they are to the world. Captain Marryatt's is a fine code of philosophy. "Take it coolly." "Can't help it, wish I could." "Better luck next time."

"Don't be in a passion," says the salesman.

"Enough to make any one angry," says the sender.

"Well, it's no use if you are," says salesman; "it wo'n't unpack nor sell your goods."

"But I want my account and money, and want to go home," says sender.

"If it's only money you want," says salesman, "here's money, and I'll send the account when the goods are sold."

This is a common scene.

Then comes the retail buyer. He is always a living mistake. A retail buyer has no business at a wholesale stall. A man who goes into a market to buy goods, by the act itself pits his knowledge and judgment as a buyer against those who sell.

SPANISH FOWLS AS EGG-PRODUCERS.

In all the notices I find of Spanish hens they are invariably spoken of as good layers, and yet neither you in your "Poultry-Book for the Many," nor your correspondents, recommend them as good birds to keep for their egg-and-chicken-producing properties. Now, as I have searched in vain to know why, perhaps you will kindly enlighten me on that point.—Amateur.

[Spanish hens lay large eggs, and almost daily during the warmer months of the year; but in winter when eggs are most scarce they usually cease from laying, and never average more than two a-week during autumn, winter, and early spring. They are tender fowls, and in severe winters are liable to be frost-bitten.]

CAUTION.

I would caution your readers against an individual, by name Ridgway, writing from Gorton, who has shown an anxiety far from praiseworthy to obtain choice birds cheaply. My case was this —In answer to an advertisement in your Journal some three months back, I received an application for some Brahma fowls, requesting they might be sent to the writer's address as above, with a notice previous to their being sent, enclosing "an account," for which the money would be sent by return of post. Nothing doubting, the birds were sent, but no post-office order came; so, after waiting a reasonable time, I wrote to the postmaster of Gorton, and received the prompt though unpleasing intelligence that my correspondent was a man of "no means," and that mine was not the first inquiry as to "who he was." I trust others were wiser than myself, and their inquiries were made before their birds were sen[illegible] done so I should not have had the melancholy satisfaction [illegible] this letter and of subscribing myself.—[illegible]

[This [illegible] slightest pity. [illegible] have we [illegible] similar even[illegible] [illegible] are two rules which should never be swerved from upon any pretence whatever—1st, Never buy birds which you or some friend has not seen; 2nd, Never part with birds to a stranger before you have received the money for them.]

CRYSTAL PALACE BIRD SHOW.

Another year of exhibitions has commenced; and among those on the list is one in which all admirers of Nature, and especially of ornithology, take no small interest. The Exhibition referred to is the Crystal Palace annual Show of British and Foreign Birds. There is no place, it may be truly said, better calculated for such a display than the tropical department of that most favoured resort of pleasure-seekers; most of the specimens being fancy birds which have been kept in warm quarters. The beauty of the plants, and the sweet notes of the little feathered songsters, making one forget that the dreary winter is but half passed.

This Exhibition, which commenced on Saturday, will continue open until to-morrow. There were 414 cages of birds, and very few very indifferent specimens among them. The object of most attraction was No. 295, Mr. H. Hanly's Aviary, containing all the British Finches, Linnets, and their rare Hybrids—viz., Hawfinch, Bullfinch, Bramblefinch, Chaffinch, Greenfinch, Goldfinch, Brown Linnet, Twite, Mealy Redpole, Rosy Redpole, Common Redpole, Aberdevine. Hybrids between Canary and Goldfinch (Jonque), Canary and Goldfinch (Mealy), Canary and Aberdevine, Canary and Linnet, Canary and Greenfinch, Linnet and Greenfinch, Goldfinch and Greenfinch, Bullfinch and Goldfinch. All Cocks.

The subjects are certainly superior to any previously exhibited, and it is evident that those persons who take an interest in this class of exhibitions have not been idle since the last collection.

The weather this season is, on the whole, more favourable than on the last occasion, both for the birds and for the visitors.

To select any one class for special commendation would be next to an impossibility; but of those which seem to monopolise the greater share of attention, may be mentioned the following:—

Among the British Birds, which, on the whole, were fine in feather, were some very beautiful and novel varieties of the Bullfinch; also two very peculiarly-coloured Magpies, which deservedly obtained a prize. They were the property of Mr. E. Hawkins, of Bear Street, Leicester Square. There were some very fine and beautiful hybrids, particularly between the Goldfinch and Bullfinch. Our favourite Song Thrush and Blackbird had their representatives which were in beautiful condition.

The Foreign Birds were very fine, consisting of some rare and beautiful specimens. Among this class were some very lovely Parrots and Parroquets from the South Sea Islands, New Holland, and Western Australia, which were very much admired for their elegance and beauty of form.

The show of Canaries was more extensive than on any previous exhibition, and the birds were of a very superior quality; among which may be noticed some extraordinary and beautiful specimens of Mules between the Canary and Linnet, and the Canary and Goldfinch.

The increase in the number of entries is a matter for congratulation to the promoters; and great praise is due to the Secretary, Mr. Houghton, for his indefatigable exertions and attention to, and arrangement of, the specimens exhibited.

The following are the awards:—

CANARIES.

Norwich (Clear Yellow).—First, D. Grice, Bath House, Norwich. Second, T. Madge, Bath House, Norwich. Very Highly Commended, J. Ilton, St. Clement's, Oxford. Highly Commended, Mrs. Statham, Park Terrace, Penge. Commended, J. Judd, Newington Road, Surrey; R. Mackley, St. Miles, Norwich. (This class is very superior.)

Norwich (Clear Buff).—First, E. Hawkins, Leicester Square. Second, T. Madge, Bath House, Norwich. Very Highly Commended, W. Lamb, Bath House, Norwich. Highly Commended, J. Ilton, Oxford; R. Mackley, Norwich. (Class good.)

Belgian (Clear Yellow).—First, E. Hawkins, Bear Street, Leicester Square. Second, H. Marshall, Sands House, Durham. Very Highly Commended, E. Hawkins; O. Nicholson, Fareham, Hants. Highly Commended, G. Corbett, Birmingham. Commended, E. Bemrose, Derby. (Class good. Great improvement on second year.)

Belgian (Clear Buff).—First, H. Marshall, Durham. Second, E. Hawkins, Leicester Square. Very Highly Commended, E. Hawkins. Highly Commended, W. Young, Oxford. Commended, — Bell, Piccadilly.

Belgian (Variegated or marked Yellow).—First and Second, E. Hawkins, Bear Street, Leicester Square. Very Highly Commended, —Bell, Piccadilly; G. Corbett, Balsall Heath, Birmingham. Highly Commended, H. Marshall, Durham; J. [illegible] Commended, O. Nicholson, Fareham. (Class very good.

[illegible] Nicholson, Fareham

E. Hawkins, Bear Street, Leicester Square. Highly Commended, .t. Commended, G. Corbett, Balsal Heath, Birmingham.

Yellow Crested.—First, E. Hawkins, Bear Street, Leicester Second, G. Harding, Ashton-under-Lyne. Commended, J. Lingard, nder-Lyne.

Mealy Crested.—First, withheld. Second, J. Lingard, Ashton- ne.

-spangled Lizard.—First, J. Lingard, Ashton-under-Lyne. Second, ı, Edgware Road, Paddington. Highly Commended, W. Smith, Road, Paddington; J. Waller, Finsbury. Commended, I. Steven- Basford

l-spangled Lizard.—First, O. Green, Boyne House, Notting Hill, E. Hawkins, Bear Street, Leicester Square. Very Highly Com- W. Smith, Edgware Road, Paddington. Highly Commended, W. . Waller, Finsbury. (Class good.)

n Fancy (Mealy).—First and Third, J. Waller, Tabernacle Walk, . Second, O. Green, Boyne House, Notting Hill. Very Highly led, J. Waller. Commended, W. Arthur, York Road, King's Cross.

n Fancy (Jonque).—First, Second and Third, J. Waller, Finsbury. hly Commended, F. Hook, Walworth Road, London. (Class good.)

es (any other variety).—First, W. Walter, Jewry Street, Winches- w Norwich). Second, E. Hawkins, Bear Street, Leicester Square elgian). Second, J. Judd, Newington Road, Surrey (Variegated . Very Highly Commended, E. Noon (Variegated Norwich). Highly ded, R. Mackley, St. Miles, Norwich (Variegated Yellow Norwich.)

nch Mule (Mealy).—First, R. Mackley, St. Miles, Norwich. Second, ur, York Road, King's Cross. Very Highly Commended, W. Arthur; Newington Road, Surrey; C. C. Stockdale, East End Villas, . Highly Commended, W. Arthur; T. Brown, Francis Street, Wal- C. Stockdale. Commended, J. Rose, Norwich.

nch Mule (Jonque).—First, W. Walter, Jewry Street, Winchester. V. H. Morgan, Plymouth. Very Highly Commended, G. J. Barnesby, E. Hawkins, Leicester Square; H. Marshall, Durham. Highly led, E. Hawkins. Commended, J. Waller, Tabernacle Walk

Mule (Mealy).—First and Second, J. Lingard, Ashton-under-Lyne ommended, W. Dobbie, Kent.

Mule (Jonque).—First and Second, E. Hawkins, Leicester Square

ther Variety of Canary Mules.—Master W. Verner, Ryde ight (between Greenfinch and Canary), Second, E. Hawkins Square (between Siskin and Canary).

BRITISH BIRDS.

nch.—Prize, Miss La Touche, Norfolk Street, Park Lane. Highly ed, J. Judd, Newington Road, Surrey.

nch.—Prize, Miss M De Lasaux Simmon's, Chilcombe Rectory, er. Commended, F. Hook, Amelia Street, Walworth Road.

nch.—Prize, E. Dredge, Surrey Lodge, Penge. Very Highly Com- H. Hanly, First Life Guards, Hyde Park, Barracks. Highly Com- G. Harding, Ashton-under-Lyne.

ill.—Prize, E. Hawkins, Leicester Square. Commended, W. Ebury Street, Belgravia.

.—Prize, E. Hawkins, Bear Street, Leicester Square.

k.—Prize, J. Judd, Newington Road, Surrey.

—Prize, C. C. Stockdale, Finchley. Highly Commended, W. Young,

ird.—Prize, Mrs. Dodd, Grosvenor Place. Highly Commended, n, Woodbine Grove, Penge.

hrush.—First, H. Surman, Fareham, Hants. Second, F. E. Col- g's Road, Clapham Park. Highly Commended, Mrs. Statham, H. Benham, Anerley Vale, Norwood; C. C. Stockdale.

es (any other variety).—Prize, W. Walter, Winchester (Missel

g.—Prize, W. Bicknell, Ebury Street, Belgravia.

.—Prize, W. Walter, Jewry Street, Winchester. (Says—"Mother, m coming—Mother, it rains—Tom, you hav'n't fed me—Pretty ." Calls dogs—"What's o'clock?—quarter to 4;" and several other

w.—Prize, W. Walter, Jewry Street, Winchester.

her Variety of British Birds.—Prize, J. P. Hine, Netherbury, Dove-coloured Magpies).—Very Highly Commended, Master W. Ryde, Isle of Wight (Bullfinch. Yellow-breasted).

or Mule Birds—not Canary Mules.—Prize, W. E. Harvey, rs (between Bullfinch and Goldfinch). Very Highly Commended, kdale, East End Villas, Finchley (between cock Goldfinch and hen). Highly Commended, G. Williams, Albion Road, Hammersmith.

BIRDS OF PASSAGE AND MIGRATORY BIRDS.

ngale.—Prize, C. C. Stockdale, Finchley.

or Aberdevine.—Prize, J. Judd, Newington Road, Surrey. ommended, Hon. A. D Willoughby, Caen Lodge, Twickenham.

ther Variety of Birds of Passage and Migratory Birds.— Bicknell, Ebury Street, Belgravia.

FOREIGN BIRDS.

Parrots.—Prize, F. G. Dutton, Bibury House, Fairford. (This bird l whistles.) Highly Commended, Mrs. Statham, Park Terrace, (Says—"Polly, pretty Polly!—Who are you?—You're a rogue!— you want?—Halloo!—It's one o'clock." Sings "Pop goes the and other tunes. Imitates various animals, birds, &c.)

Parrots.—Prize, A. Cantwell, Southampton. Very Highly Com- Mrs. Maddock, Montague House, Upper Sydenham. Highly Com- Mrs. Dodd, Grosvenor Place. (Speaks French and Basque a little.)

ther Variety of Large Parrots.—Prize, Miss Stevenson, Black- Very Highly Commended, Mrs. Maddock, Upper Sydenham; W. W. ke, Star Hotel, Upper Norwood. (Whistles "Buy a Broom," Doodle," &c.)

irds.—Prize, E. Hawkins, Leicester Square. Highly Commended, Newington Road, Surrey; Miss Stevenson, Blackheath; H. N. , Fitzroy Square.

lian Grass Parroquets.—Prize, E. Hawkins, Leicester Square. ommended, J. Judd, Newington Road, Surrey; H. N. Whitaker, uare; Mrs. Maddock, Upper Sydenham.

cked, or Bengal Parroquets.—Prize, E. Hawkins, Leicester

her Variety of Small Parrots or Parroquets, in Pairs.—Prize, H. N. Whitaker, Charlotte Street, Fitzroy Square (Tarquisine Parroquet).

King Parrots.—Prize, Miss Stevenson, Vanbrugh Fields, Blackheath. Very Highly Commended, H. N. Whitaker, Fitzroy Square.

Rosehill Parroquets.—Prize, J. Judd, Newington Road, Surrey.

Pennant's Parroquets.—Prize, E. Hawkins, Leicester Square.

Red-rump Parroquets.—Prize, J. Judd, Newington Road, Surrey. Highly Commended, F. G. Dutton, Bibury House, Fairford.

Cockatoos (Rose-breasted).—Prize, J. Judd, Newington Road, Surrey. Highly Commended, H. N. Whitaker Fitzroy Square.

Cockatoos (Sulphur or Lemon-crested).—Prize, Mrs. Emm, Watford, Herts. (Says—"Polly wants some water—Tea—Coffee—Beautiful creature—Pretty creature—Glass best ale—Glass brandy and water—Pretty Cockatoo—Polly show her pretty feathers—Polly wants something to eat—What's the matter, Polly?—Good-bye—Good night—Puss—Prin"—Laughs and barks—"Polly wants a swing—Three cheers for the Queen!"—and various other things.)

Cockatoos (Rose, Salmon, or Orange-crested).—Prize, H. N. Whitaker, Fitzroy Square.

Cockatoo (Leadbeater's).—Prize, H. N. Whitaker, Fitzroy Square.

Cockatoos (any other variety).—Prize E. Hawkins, Leicester Square.

Diamond Sparrows.—Prize, J. W. Wooler, Holywell, Heighington, near Darlington.

Sparrows (Coral-necked).—Prize, J. Judd, Newington Road, Surrey. Highly Commended, E. Hawkins, Leicester Square; J. Judd.

Java Sparrows.—Prize, E. Hawkins, Leicester Square.

Indigo Blue Birds.—Prize, E. Hawkins, Leicester Square.

Zebra Wax-Bills.—Prize, J. Judd, Newington Road, Surrey.

Any other Variety of Wax-Bills.—Prize, H. N. Whitaker, Charlotte Street, Fitzroy Square (St. Helena). Highly Commended, J. Judd, Surrey (African); E. Hawkins, Leicester Square (St. Helena).

Virginian Nightingales.—Prize, H. N. Whitaker, Charlotte Street, Fitzroy Square.

Cardinals.—Prize, F. G. Dutton, Bibury House, Fairford. Highly Commended, H. N. Whitaker, Fitzroy Square (Red-crested).

For any other Variety of Foreign Birds.—Hon. A D. Willoughby, Caen Lodge, Twickenham (pair of birds from Australia). Highly Commended, E. Hawkins, Leicester Square (Black-headed Manikins.

For the Best Group of Foreign Birds in one Cage or Aviary,—Prize, E. Hawkins, Leicester Square.

Judges.—Of *Canaries*, Mr. A Willmore and Mr. T. Moore. Of *British and Foreign Birds*, Mr. W. Goodwin.

THE CANARY AND THE BRITISH FINCHES.

(*Continued from page* 288.)

FOOD.

As I am at present treating only of seed-eating birds, or, as they are generally called among fanciers, seed birds, my remarks in this chapter refer only to them. The birds under consideration are arranged by naturalists in three orders—viz., the Grosbeaks, the Finches, and the Buntings.

In a natural state the Grosbeaks seem to prefer kernels or the seeds of berries.

Most of the Finches are, strictly speaking, seed birds, though when seeds are scarce they will eat green vegetables. Still, some are omnivorous, as the Sparrow and the Chaffinch, which is taken as the type of the order, though an insect-eating bird only feeding on seeds when it cannot procure that kind of food.

The Buntings, however, can hardly be called true seed birds; for though they have hard bills and can shell seeds, which they eat even in a wild state when insects are hard to be procured in winter during frost or snow, yet they prefer insects like the Chaffinch; and though they are often kept in confinement wholly on seeds, yet their health is improved by the occasional allowance of some other food more in accordance with their nature.

It seems a wise provision for the good of man that these omnivorous birds should remain in our changeable climate all the year round, to keep in check the myriads of insects that would otherwise destroy our crops. The migratory insectivorous birds appear in summer and thin the insects that are then in existence; but the resident birds attack them in their winter retreat when the leaf has fallen, or on their first appearance in early spring. Yet for their own preservation are enabled to subsist on seeds when winter's cold seals up their living food. It does seem somewhat short-sighted to grudge these birds a few grains to the preservation of which they have contributed so much.

But to return to my immediate subject. The food of seed birds in confinement, that which has been found to be the best suited as a staple, is canary seed (*Phalaris canariensis*). It is an annual and grows like strong grass. The seed is contained in an oval-shaped ear. It is principally cultivated in the Isle of Thanet, and that part of Kent.

In addition to this may be given oats (*Avena sativa*), which are best shelled, and millet (*Millium*), which is, also, a cultivated plant of the corn tribe, bearing large ears of small round seeds.

Buckwheat (*Polygonum fagopyrum*), may likewise be given as a change, and many birds are fond of its dark, three-cornered seeds.

Mawseed.—This is the seed of the single white Poppy (*Papaver somniferum*), the plant from which opium is obtained. The seed produces a fine oil, and is found free from the drug. It has a pleasant nutty flavour, and birds are mostly very fond of it. It may be given as a treat, and is far preferable to hemp or rape.

Linseed or Flaxseed (*Linum perenne*), is sometimes given to birds; but they are not fond of it and I think it is not a wholesome food, but might be used medicinally.

Rape seed (*Brassica napus*), a small, round, black seed resembling shot. It belongs to the cabbage tribe and is cultivated for its oil. It is commonly given by fanciers to their birds; but I expect more from a mistaken economy than from any good it is supposed to do them. It is a very hot or pungent seed, and causes inflammation in the bowels, of which many young birds die. I consider it a very unwholesome seed, and only to be used after being scalded and well washed for rearing young Linnets, when mawseed is not easily procured.

Hempseed, the seed of a plant cultivated for its fibre, of which cordage is made. Oil is also extracted from the seed, and in the east an extract is obtained from the leaves resembling opium of an exhilirating nature. The seed has a similar effect on birds, and often proves fatal if continued long. All birds are very fond of it, and it may, if judiciously used, prove beneficial occasionally. These constitute the principal seeds that are in general use for feeding cage-birds.

Before, however, dismissing this subject, I will offer a few words on condiments, by which I mean such substances as are given in addition to seed and clean water. The first of these is sand or grit, which is essential to assist the trituration or grinding of the hard seeds in the gizzard. Lime is also useful and may be given in the form of old mortar, or a piece of cuttle-fish bone, at which the bird will peck when he requires it. Green meat is very good for such birds as will eat it, and may consist of lettuce, chickweed, groundsel, and shepherd's purse.

And, lastly, by way of a treat, or change, they may be regaled on a slice of apple or pear, a nut or almond, a piece of bread or plain cake, or of boiled potatoes, carrot, or broccoli.

When birds are put up to breed they are then offered a more nutritious food which is also easily appropriated to feeding their young. This consists of the crumb of home-baked bread, or stale bun or biscuit crumbled fine, mixed with chopped hard-boiled eggs, and some oily seed. Mawseed I think is best. I have used Gold-of-pleasure seed with great success; but I do not advise the use of either rape or linseed, and hemp should be given only to induce pairing. Perhaps sunflower seeds and nuts or almonds might be added with advantage, but I have not tried them sufficiently to say. There are many seeds of weeds, as thistle, dandelion, plantain, shepherd's purse, &c., which may be given to those that will eat them, and will prove a great treat. A frequent change is always beneficial as well as pleasing to the taste, and while we endeavour to keep our pets in health by judicious feeding, we should also endeavour to please the natural wishes of our prisoners which are completely dependant on us.—B. P. Brent.

(*To be continued.*)

THE CHEMISTRY OF HONEY, WAX, AND PROPOLIS.

Whence come the honey, wax, and propolis found in our hives? Are they in the same state as when gathered by the bees, or have they undergone any change in the stomachs of the bees? In endeavouring to answer these queries we will consider each substance separately.

Honey, we are of opinion, is nearly if not entirely unaltered by the bee. It is the saccharine secretion of flowers sucked up by the insect, and carried in its stomach promptly, and deposited in the cells of the comb.

The bee has two stomachs. The honey does not proceed beyond the first stomach, and is ejected from it into the cell through the mouth. This was first shown by the anatomical researches of Swammerdam. It receives the fluid collected from the flowers; and Mr. Hunter states, that whatever time the contents of this stomach may be retained he never found them altered, so as to give the idea of digestion having taken place.

This is coincident with the experience of practical bee-keepers, who all agree that it derives a slight flavour from the flowers whence it is collected, and is darker or lighter-coloured in accordance with the plants from whence it is obtained.

[illegible] h[illegible] slight difference in t[illegible] of honey collected from totally different flowers, is a proof that it is altered in the stomach of the bee; for, say they, if you suck the flower of the cowslip and the clover, both are sweet, yet how different the flavour! This, however, is no demonstration at all, for the bee selects the sweetness, extracts the honey from the glands which secrete it, but does not suck the glands which secrete the flower's perfume; but when we suck a flower, we imbibe together the contents of all the glands.*

We are aware Reaumur states that if bees are supplied with sugar, they will from this substance fill their cells with honey, differing in no respect from the common sort, except that its flavour is rather heightened.—(*Reaumer's* "*Memoirs,*" v. 722.) But, on the other hand, we hear from several bee-keepers that no such change takes place. One eminently practical authority, Mr. Taylor, says, "That the bees have not the ability to change chemically the contents received into their honey-bags is shown by an examination of the saccharine mixtures given to them as artificial food; in which I never could detect any alteration after being stored in their combs." (*Taylor's* "*Bee-Keeper's Manual,*" 175. Sixth Ed.)

That sugar is suitable food for bees is demonstrated by honey being, in fact, nothing more than liquid sugar rendered incapable of crystalising by being mixed with an acid, or, as Dr. Thompson describes it, "Honey is a concentrated solution of grape sugar. When left at rest it gradually separates into two portions, one remaining liquid, and the other becoming solid, assuming the form of small, whitish-coloured sphericles. The liquid portion, so far as is known, exactly resembles the liquid sugar from the sugar cane; while the granulated portion is identical with the sugar of grapes." The sphericles are formed of minute crystals diverging from a centre. These have been analysed by Dr. Prout, and he found them composed atom for atom the same as sugar obtained from starch. Here are his analyses—

	Starch sugar.	Honey sphericles.
Carbon	36.36	36.36
Hydrogen	7.07	7.07
Oxygen	56.57	56 57
	100.00	100.00

As further evidence that honey undergoes but little change in the stomach of the bee, that which is chiefly collected from flowers of the rhodoraceæ, such as kalmia, azalea, and rhododendron is said to be poisonous, but certainly is very different from that collected from clover, lime, sycamore, and labiate flowers generally; and that which is gathered from the heaths is darker, and differs in flavour from both those above specified. Then the honey of Surinam and Cayenne, collected by the Apis amalthea is red; and the honey of Madagascar, stored by the Apis unicolor, collected by that insect from the flowers of Mimosa heterophylla and Weinmannia glabra, is greenish in colour and exquisite in flavour.

It is a fact that sugar cannot crystalise if a little acid is contained in the syrup. For feeding bees, therefore, it would be well to dissolve a small quantity of tartaric acid with the sugar in the water.

Wax is our next subject, and this, as shown by the researches of Huber, Duchet, and Hunter, and mentioned long before by apiarians connected with the Lausation Society, is formed from honey digested in the second stomach of the bee, and when secreted in appropriate glands is emitted from under the scales of its abdomen, and, as Mr. Hunter observes, "it is formed beneath each scale of the under side of the belly.—(*Philosoph. Trans.*, 1792, p. 145.)

Huber demonstrated anatomically the glands in which the wax is secreted, and by a series of well-conducted experiments showed that naturally the quantity of wax secreted is in proportion to the quantity of honey consumed, but that an equal, or even larger amount of wax will be formed if the bees are fed on sugar dissolved in water. When fed on pollen and fruits only they did not secrete any wax. The probability of wax being thus formed is evinced by sugar and wax being formed of the same constituents, though in different proportions. Wax is composed of

Carbon	80.14
Hydrogen	14.08
Oxygen	5.78
	100.00

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* The opinion that the honey undergoes no change in the stomach of the bee is no modern idea. The Abbé Boissier de Sauvages, a thoroughly practical bee-keeper, published his "Observations sur l'origine du Miel," in 17[illegible], in which he says the bees do not make honey, but simply collect it.

To form wax out of sugar, therefore, the digestive and secretive organs of the bees have to separate from it more than 50 per cent. of oxygen; adding 7 per cent. of hydrogen, and 44 per cent. of carbon. Chemists have not hitherto converted sugar into wax, but by mixing it with caustic alkalies and some other re-agents they have rendered it gummy; and it is a fact not without significance, that a peculiar kind of wax, to which the name of ceroxine has been given, has been found in the sugar cane.

Propolis is a gummy resin collected by the bees from the buds of trees, as from those of the Tacamahaca poplar (Populus balsamifera), birch, firs, &c., and used by them for fastening the hive to the floor-board, and any holes they dislike. Mr. Knight relates an instance of their carrying away an artificial compound of beeswax and turpentine, which he had employed for covering the wounds of trees. Propolis is soft, red, and aromatic.

According to the analysis of Vauquehin ("Memoirs Soc. Agric. Departemen. Seine") it is composed chiefly of resin, a small proportion of wax, and a little acid and aromatic matter. Cadet says the acids are the benzoic and gallic. The resin is composed of

Carbon	78.94
Hydrogen	10.53
Oxygen	10.53
	100.00

TEMPERATURE OF BEE-HIVES IN WINTER.

In your last publication your correspondent "A Devonshire Bee-keeper," writing on the subject of ventilation of bees in winter, speaks of Huber's experiments as proving that the average temperature of a hive at that season is above 80°. What might be the difference between a warm climate and my own (north of London), where I experimented on five hives, I cannot say; but at foot I give a copy of a thermometrical journal kept some years ago, which may throw a little light on the question, as the result is widely different from that of Huber. On this subject I would say a word on the assertion of Nutt, that the heat of a hive, previous to its swarming, may reach 120°, as was the case, he says, with one of his on 26th June, 1826. Now, it so happens that Nutt's own daily thermometrical journal of that year in June, as given in his book, shows that the temperature therein recorded ranged from 62° on the 1st, to 96° on the 30th, the heat on the 26th June at five P.M. being 91°. Wishing to learn the effect of a certain degree of heat, I suspended a piece of comb and a thermometer in an earthen jar, putting it on a stove. At a few degrees over 100° (I am sorry I cannot give the exact figure), the comb collapsed into a mass of pulp; so that I may be pardoned for a little incredulity as respects the accuracy of both these writers, though I do not mean to assert that a stock-hive in winter never reached to 80°.

My experiments were made, if I recollect aright, with a thermometer inserted into the middle of the hive No. 1, a very healthy one, and I registered the temperature both inside and outside with the hour of the day. I think the hive was ventilated.

Hive No. 1.

1835.	Hour.	Outside. deg.	Inside. deg.	1836.	Hour.	Outside. deg.	Inside. deg.
Nov. 15	10 a.m.	43	50	Feb. 7	10 a.m.	42	55
Dec. 5	1 p.m.	45	53	,, 13	1 p.m.	47	78
,, 13	9 a.m.	36	60	Mar. 13	9 a.m.	42	55
,, 25	9 a.m.	22	42	Nov. 8	8 a.m.	32	43
1836				,, 16	8 a.m.	45	50
Jan. 3	10 a.m.	35	64	,, 27	10 a.m.	49	51
,, 17	8 a.m.	36	45	Dec. 25	9 a.m.	28	35

Hive No. 2.—Ranged from 30th October, 1835, to March 13th, 1836, from 32° the lowest, to 50° the highest.

Hive No. 3.—Ranged from October, 1835, to 7th February, 1836, from 51° the lowest, to 60° the highest.

Hive No. 4.—Ranged from 15th November, to 25th December, from 30° the lowest, to 47° the highest.

Hive No. 5.—Ranged from 6th November, 1836, to 1st January, 1837, from 34° the lowest, to 41° the highest.—H. Taylor.

HIVE COVERS.

I owe you many thanks for your advice, at page 307, as to "How am I to Protect my Hives?" together with the neat sketches with which it was accompanied.

Of what sort of wood are they formed, and do not you find half-inch stuff so exposed crack and rend in the sun? Are they painted? Or supposing that thick canvass was stretched and tacked on, then painted, would this be a preventive and increase their coolness? Or could you or any subscriber inform me if felt so applied to such light-wooded covers as you describe, proves a durable and desirable addition? and would such be obnoxious to the bees? The front or whole neatly thatched with straw would so far answer the purpose; but then I wish to have them formed so as to afford no shelter to moths, earwigs, &c. You mention you have slate tops for *fig.* 1. What sort of cover would it make to have it wholly of slate fitted into wooden or iron frames? But perhaps that material might be too hot in summer and cold in winter. Or, maybe, a still better and economical material too, glazed fireclay, now used for many purposes, and of which "A Renfrewshire Bee-keeper" told us in one of the early Numbers of your new series his pedestals were formed. In that case I would have them made with moveable tops exactly after the design of your *fig.* 2. I like that *fig.* best, the moveable top particularly, for this reason—that supposing I doubled my stocks at any time, I had only to set a second cover on the first (secured), and the top over all to provide for such a contingency. Instead of panels, to improve the plain appearance of the front, I think little pillars halved, one tacked on at each corner, and one each side of doorway, their heads fixed to moveable top, so, if I put two covers together they would only show an extension of the pillar and have less of a doubled appearance, and there being no cross portion as in the panels to catch the descending moisture.

I do not quite understand the entrance and end of landing-board, partly seen in the sketches. Would you explain?

Since I set up as a bee-keeper, of this cover question I have as often said, as did the late Sir Robert Peel of Ireland, "it is my difficulty."—W. J.

[Our hive-covers are made of yellow pine, which, if clear and sound—*i.e.*, free from knots and cracks, will, when well seasoned and painted, stand all weathers without rending or splitting. They have really proved so efficient that we have never experimentalised with other substances. The canvass covering suggested by you we believe, therefore, to be unnecessary, and we should fear that the strong smell of ordinary felt might be obnoxious to bees. Slates employed as a roof only are not without their disadvantages, which would be more strongly felt if the entire hive were cased with them. Of glazed fireclay we can say nothing, except that its weight and fragility would probably be against it. Pilasters may be added, but should not be fixed so firmly as to prevent the wood from shrinking or swelling with perfect freedom. The entrance and alighting-board belong to the hive inside the cover; and, not being attached to the latter, should not perhaps have appeared in the engravings. They are, however, most successfully dilineated in *fig.* 2; and, if you will turn to page 42 of Vol. XXV. of The Cottage Gardener, you will there find a sketch of a bee-box without its cover, which will probably throw sufficient light on the subject to render it intelligible.]

LIGURIAN OR ALP BEES.

Nineteen months have now elapsed since I last addressed you, expressing my fears of the success of "A Devonshire Bee-keeper's" cruise of artificial queen raising, during which time, although I have been a silent, was by no means an uninterested expectant of the snatches of the log with which he so kindly favoured us.

Sympathising in the satisfaction it must have afforded him making good some of the nearer ports, and there safely landing his consignments—auguring the worst when the large cases containing so many little caskets were thrown overboard, and was, consequently, prepared for the intelligence of the hopeless shipwreck of the adventure announced in your columns of the 19th of November, and now only await the average statement.

Your correspondent, I daresay, never dreamt when introducing his Italian friends into polite Devon society, how they should belie his kindly recommendation by their robbing, at least in one instance, a neighbour of his means, and in how many more the unsuspecting young virgins of their virtue, the unmistakeable hybrids your correspondent caught sight of on calling satisfactorily establishing their guilt; yet what else could be looked for when these yellow foreign scoundrels make good a footing in English Society?

"S. B." anticipated the query I intended sending you as to what legal remedy I might have should any neighbour of mine introduce the foreigners into his apiary, thereby contaminating the pure native blood of my favourites; and, notwithstanding the adverse opinion you express, should any be rash enough to make the attempt, it is my intention to crave interdict and try the point; and, although Blackstone did not provide for such a contingency by pointing out the law as distinctly as in the case of strayed swarms quoted in No. 9, still as there are plenty of cases where male animals straying through an insufficiency of the fence among the females of a neighbour, and thereby deteriorating his stock which might be held applicable as a precedent. The only safe fence in this case would be a transport of the obnoxious intruders at least some half-dozen miles from my apiary.

With all I must admit that from reports in your Journal their hardihood and productiveness would seem clearly established, and fair assistants have in addition pronounced them interesting and beautiful too; still, as rank weeds are wonderfully hardy and prolific, and as the yellow wolfish wasp possesses these qualities in a superior degree, at the same time being altogether wanting, in what S. Amey expressively styles the "main point," I fully reciprocate his and Col. Newman's anxiety for satisfactory information on this head, without which it is not beyond possibility that your excellent Devon contributor, by his dissemination of this variety, be landed, however unintentionally, in the awkward predicament of that patriotic Scotchman you told us of some time ago, who, in mournful remembrance of his national emblem, sowed the thistle down in his adopted land of Tasmania, the melancholy results of which act were in a short time, as it would be in the case of your correspondent, beyond human power to control.

As it is not unlikely there may be other parties readers of your Journal who, previously to, or simultaneously with, Messrs. Neighbour imported these, and may vie with them as to the credit of being their introducers, it would be highly interesting to all your apiarian readers were they politely to afford us some information as to the weight or comparative store collected by, say, a swarm of this and the old variety.

Should their superiority in this respect be as clearly established as their "prowess" in love and in war, then, and not till then, will I stoop to the "spirit of the age" and procure a Ligurian stock; not, however, without looking back with poignant regret on the many happy years I have spent as—AN OLD FRIEND OF THE BLACK BEE.

INTERBREEDING.

WILL "UPWARDS AND ONWARDS" excuse my pointing out that any diminution in the size of the working bees in a hive is entirely owing to the combs being old, and their cells becoming contracted by long-continued breeding, and is not at all affected by what is usually called breeding in-and-in? As every colony of the species Apis mellifica constructs cells of precisely the same size, whether located in this country or at the antipodes, his bees would, therefore, neither increase nor diminish in size if he could succeed in crossing them with "B. & W.'s" Tasmanians. Even Apis ligustica builds cells of the same gauge as mellifica, whatever M. Hermann may asseverate to the contrary, and for this reason the bees of both species are of the same size, with the exception that I believe Apis ligustica to be rather longer than the common bee.

In conclusion, I wish to thank "UPWARDS AND ONWARDS" for the interesting relation of his experience as an Oxfordshire bee-keeper, and would indulge a hope that other apiarians may be induced to follow his example in this respect.—A DEVONSHIRE [illegible]-KEEPER.

[illegible]POSING DIFFICULTY—EFFECTS OF INTERBREEDING.

[illegible] regard [illegible] sup[illegible]posing difficulty, in reply to the [illegible]ks of "H. B. D." [illegible] may state that when I wrote my obser[illegible]ations on this subject, I had, unfortunately, mislaid several [illegible] the Numbers of THE [illegible]NAL OF HORTICULTURE: hence [illegible] [illegible] which gives offence [illegible] [illegible]ly write conditionally [illegible] [illegible] "RENFREWSHIRE BEE-KEEPER'S" remarks, who seemed to deny the possession of eyes and practical knowledge to our respected apiarian friend in Devonshire; and, agreeing with one, I wished to be understood that I did not disagree with the other in one of those not uncommon cases, where "both are right and both are wrong."

As to "the principles and practice of storifying not being so well understood in the south" as in the north, that I consider as yet "not proven." But it would be very interesting to your readers if some of our northern friends would kindly detail their method of storifying. The plan I now adopt is extremely simple, and I find it to answer admirably well; but I do not think it materially differs from that practised by Dr. Bevan, who was a veteran in bee experience, and obtained large honey harvests when honey was to be collected. Thus, last year I began the season with only five stocks, from which I obtained over 2 cwt. of honey (run and in the comb); my stocks having increased from five to eight at the end of July.

The bees of Tasmania did, I believe, all spring from one stock—*i.e.*, the stock originally carried out to New South Wales by one Dr. Wilson a great many years ago; and I had personal experience of their excellence in every respect. This one stock became the parent of eleven swarms the first season, which increased to three hundred in three seasons; so a well-known writer on Australia was informed. But I am inclined to think that it is nevertheless desirable, as well as possible, to introduce new blood into an apiary or neighbourhood from time to time, as I have certainly remarked that an increased activity has been the result in cases where I have procured bees from a distance, or removed them to a distance. I say "new blood" advisedly, for I do not think that a mere removal from one locality to another can entirely, or even chiefly, account for this increased activity. Our good friend "A DEVONSHIRE BEE-KEEPER" seems not only to doubt whether the most isolated bees can be protected from crossing (wherein I agree with him), but also whether any benefit is derived from such crossing of blood. This, I fear, must remain open to speculation only; but why should we doubt the beneficial effects of cross-breeding in the case of insects any more than in the case of birds and quadrupeds? and in the case of the Tasmanian bees, which are ever swarming in extraordinary multitudes every year to and from distant localities (as is the case with English bees in a less degree), who shall say that interbreeding in the fiftieth or even in the twentieth generation from a common origin (where the bees have been separated by different climates and pasturage for a considerable period), does not keep up at least the vigour and vitality of the race?—B. & W.

BEES IN CEYLON.

I DO not think the following very brief account of the bees in Ceylon has yet found its way into the pages of THE JOURNAL OF HORTICULTURE. I therefore transcribe it, and beg for it a corner in your apiarian department. If "those most productive of honey are destitute of stings," would not our apiarian ladies subscribe a purse to introduce them into England?—B. & W.

"*Bees.*—Bees of several species and genera, some divested of stings, and some in size scarcely exceeding a house-fly, deposit their honey in hollow trees or suspend their combs from a branch; and the spoils of their industry form one of the chief resources of the uncivilised Veddahs, who collect the wax in their upland forests, to be bartered for arrow-points and clothes in the lowlands.* I have never heard of an instance of persons being attacked by the bees of Ceylon: and hence the natives assert, that those most productive of honey are destitute of stings."—("Ceylon," by Emerson Tennant.)

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* A gentleman connected with the department of the Surveyor General writes to me that he measured a honeycomb which he found fastened to the overhanging branch of a small tree in the forest near Adam's Peak, and found it nine links of his chain, or about 6 feet in length and a foot in breadth, where it was attached to the branch, but tapering towards the other extremity. "It was a single comb, with a layer of cells on either side, but so weighty that the branch broke by the strain."

OUR LETTER BOX.

DIVIDING FOWL-HOUSE (*Amateur*).—Send us a rough outline of the house and its dimensions, marking where the door is, &c.

CANARY CONTINUALLY SCRATCHING HIMSELF (*F. L. Lewis*).—The bird is infested with lice. Dust flowers of sulphur among his feathers, and before returning him to his c[illegible] [illegible] thoroughly, and dr[illegible] the sulphur into all [illegible]

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	FEBRUARY 4—10, 1862.	Weather near London in 1861.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
4	Tu	Acacia floribunda.	29.993—29.808	49—41	S.W.	·01	37 af 7	52 af 4	41 11	5	11 13	35
5	W	Acacia grandis.	29.594—29.433	48—42	S.W.	.01	35 7	54 4	morn.	6	14 18	36
6	Th	Acacia Drummondii.	29.361—29.358	51—29	S.W.	.01	33 7	56 4	50 0	☽	14 23	37
7	F	Azalea Perryana.	29.492—29.408	53—36	S.W.	·04	31 7	58 4	56 1	8	14 26	38
8	S	Azalea triumphans.	29.516—29.429	48—37	S.E.	·02	30 7	v	57 2	9	14 28	39
9	Sun	5 Sunday after Epiphany.	29.995—29.498	44—36	E.	·08	28 7	1 5	55 3	10	14 30	40
10	M	Queen Victoria married, 1840.	30.207—30.151	45—22	N.E.	—	26 7	3 5	42 4	11	14 31	41

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 45.4° and 36.6° respectively. The greatest heat, 62°, occurred on the 9th in 1831; and the lowest cold, 4°, on the 9th in 1847. During the period 122 days were fine, and on 116 rain fell.

FLORISTS' FLOWERS,

THEIR DISTINGUISHING CHARACTERISTICS, CULTIVATION, AND VARIETIES.—NO. 1.

THE CINERARIA.

IT would be neither just nor generous, in commencing a series of papers like the present, to pass by unnoticed previous workers in the same field; and as I am old enough, and old florist enough too, to remember almost the first bursting forth into life of the enlarged taste that now exists for florists' flowers, I can call to mind most of those who have by either their skill in hybridising, their liberal encouragement of their growth, or their writings, tended towards this consummation, and I feel bound to say that I know of no one who has so contributed to the present state of things as Mr. George Glenny. He was bold enough when flowers were ragged and starry, and ill-defined in colour, to fix a standard, which was then considered outrageously high, and impossible, and which, even if reached, it was said, we should be no gainers by, inasmuch as the formality that would be attained would spoil the beauty of the flower. He maintained that he was right, and the event has proved it to be so. His standard is the acknowledged one, and the beauty of those flowers which meet its requirements is recognised not only by the amateur, but by the "outer barbarians," who admire, but know not why. The idea that forced itself on his mind was, that florists' flowers ought to be as circular as possible—the nearer to a perfect circle the better. He was shown such a Dahlia as old Striata formosissima, and was asked, "Do you ever expect to get such a flower round?" "Yes," was the reply; and now look at the varieties exhibited every year, and say whether it has not been done.

What is a "florists' flower?" is a puzzling question—at least, we all know what they are; but their definition is another matter. A florists' flower cannot be perpetuated by seed, but simply by cuttings, offsets, &c. It is also grown in collections of different varieties. Yet this will hardly define them. The Erica is so grown, but it is not recognised as a florists' flower. We must, therefore, content ourselves with saying that they are what they are.

As at this season of the year most greenhouses and conservatories owe a good deal of their gaiety to the Cineraria, we have thought it well to begin our notices with it, and now present to our readers a woodcut of what is considered perfection of form in this flower; for it is now a well-understood axiom of florists, that the three properties of any flower arranged in their relative order of merit, are—1, form; 2, colour; 3, size. Antecedent to all these is the habit of the plant; nothing compensating for faultiness in this respect (more of this anon). In looking at the pips of the flower as given, it will be perceived that they are evenly circular, that the petals are closely laid, so as not to leave any gaps between them, which would be fatal to its symmetry, and that they are gently curved so as not to run in straight line from the disk, but with a slight wave, which greatly adds to their beauty. The edges of the petals, too, are free from any notch in the centre—a defect which some flowers possess in a great degree. The petals ought also to be about twelve in number; a larger number confuses the pip, a smaller one makes it too open. These may seem very arbitrary rules, and so they doubtless are, but everything connected with a taste of this sort is arbitrary. Then, as to Colour. Where the flowers are edged, the colour ought to be confined to the margin in either broad or narrow bands; there being two types of edged flowers, in one the white having a much larger proportion to the flower than in the other, and in these cases the flower itself is generally larger altogether. In a self-coloured flower it ought to be bright and clear, muddiness entirely taking off from its beauty. Size is, as I have said, subordinate to the other two properties; but a really undersized flower must now be discarded; for in all the colours in which the Cineraria appears, there are varieties sufficiently large to satisfy the demands of the amateur, and a large-sized flower is unquestionably more striking than a small one.

I have said that habit is of the first importance. Of what use is a flower, however beautiful, if it be "miffy," difficult to propagate, or ugly when grown? Take, for example, Slough Rival, a pretty flower enough, but then the foot-stalks are so wiry, and the pips so much apart, that one never gets a good head of bloom. On the other hand, look at Miss Eyles, which obtained a first-class certificate last year (figured in the current Number of "Floral Magazine"), and you see at once the vast superiority of its habit. The pips are kept close together, the plant is dwarf, and, consequently, it keeps an excellent head of bloom. The potted figure represents one which was photographed from life, of Ayres' Cœrulea compacta, but I know not what amount of training it had; but it is an admirable specimen of what a Cineraria ought to be, and when it can be reached with little trussing, the value of the variety is greatly enhanced.

The culture of the Cineraria has been oftentimes dwelt upon in the columns of The Journal of Horticulture, and it may be, perhaps, superfluous to say much upon the subject, but there are a few points to be carefully attended to. The compost must be open and rich; and from the time the cutting is rooted, the plant ought never to be allowed to stand still; the pots enlarged until it gets into the blooming one, and kept moderately well watered, and just clear of frost, so that before the bloom-buds start up they may have fine, large, broad leaves, and the pots be well filled with roots. As the bloom-buds advance, guano water or other liquid manure may be applied; and, above all things, green fly must be carefully looked after, and frequent fumigation given. I may be a bungler and not have known how to use these new substitutes for tobacco, but I have to say to aphis pastils, tobacco-paper, &c., "*Este procul, profani;*" and I quite agree with a recent writer in your periodical, that it is better to give a fumigating two successive nights than a very severe one on one night only. Those that are not killed by the first attack are generally very sick, and a second one generally settles the matter with them before they have time to recover. When the plants have done blooming they should be cut down and turned out of doors in a shady place, so that they may begin to throw up the offsets on which the stock for the following year depends. These must be taken off as they reach a fair size, potted in nice open sandy compost, and placed, if possible, in gentle heat just to start them. The earlier this is done the earlier the plants will come into bloom, and a little practice will very soon determine what is the best time to commence operations. Some want them for decoration, others for exhibition, others for their own pleasure, and they must regulate accordingly.

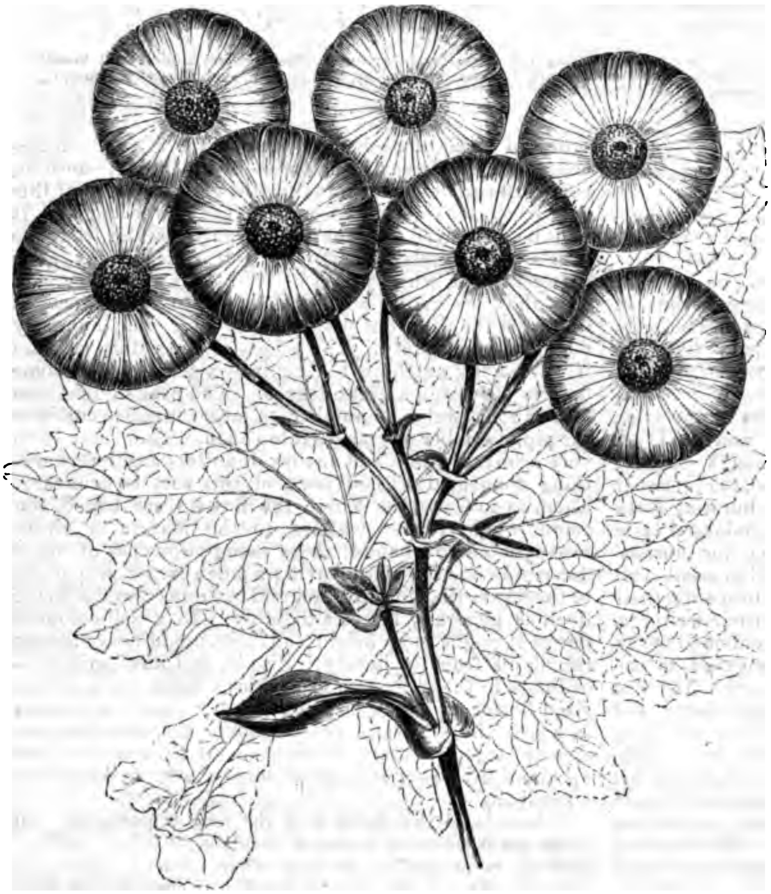


Diagram of a perfect Cineraria.

Cineraria, showing a desirable habit of growth.

As to sorts, I have, through the kindness of my excellent friend, Mr. Charles Turner of Slough, had the opportunity for some years of seeing and growing the new varieties as sent out; and from my own experience submit a list of those which seem to me to approach nearer to the standard I have laid down than any other. I take first the class of

SELFS.

Adam Bede, a lovely rose. Of dwarf habit and very free blooming.

Brilliant (Smith), rich crimson. A very effective and useful flower.

Captain Schreider, bright light blue. Very excellent.

Duke of Cambridge, brilliant crimson. Dwarfer habit, and brighter than Brilliant.

Reynolds Hole, larg[illegible] [illegible]mson. [illegible] stout and free-bl[illegible]ing.

[illegible]HITE EDG[illegible] [illegible] ROS[illegible] [illegible]RIMSON, &.

[illegible] purplish la[illegible] [illegible]

Flower of Spring, rosy purple edge, disk dark.

Incomparable, crimson carmine edging. Excellent habit.

Maid of Astolat, carmine purple edge. Strong and vigorous habit.

Miss Marnock, rosy lake edges. Free bloomer.

Miss Eyles, rose, dwarf habit. An excellent variety.

Perfection, rosy carmine, light edge. Excellent shape and good habit.

WHITE EDGED WITH BLUE, PURPLE, &C.

Bellissima, azure blue edges. Fine shape.

Eclat, dark shaded purple edges.

Lady Seymour, deep blue edge, dark disk.

Prince of Wales, deep blue edge and dark blue disk.

Royal Marine, light azure blue.

[illegible]e Colleen Bawn, blue edged and blue disk. Showy.

D. [illegible]

[illegible]RESERVIN[illegible] [illegible]

[illegible] the wind [illegible] matter of ice [illegible]ving, that I must ad[illegible]t the [illegible] [illegible] by [illegible] [illegible] right horse all this time, however, and the fix is most amusing, for there is not a syllable of dif[illegible] [illegible] differings about keeping ice when y explained. It is just such another fix as that about ariegation of plants. We are all agreed about the varie- as to what it is, we differ only in the meaning of the made use of in the explanation of what it is; and it is just out the ice. We all agree, but in different degrees of that damp is the greatest enemy to ice, and that heat is ext greatest; but here extremes meet as in a circle. The es of belief in the effects of damp air on ice range from ute certainty to the faintest idea that heat itself may be ore active agent; and so it is, and without it there would damp to destroy ice.

misunderstanding about ventilation is still more easily ined. The greatest gardener of us all, Mr. Thomson, of rcherfield Gardens in the Lothians, has the greatest nt of ventilation all round his ice-heaps of any of us, and is, or seems to be, the lesser advocate of ventilation. But ost excellent hit in keeping ice in pits made in loose sandy , explains the whole theory of ventilation from first to last. es more ventilation in those pits than ever I contemplated I had adopted that practice. Loose sand is as full of air ponge is with water after you dip it in the basin, and the g from the ice runs into the sand as fast as it comes, and there can be no vapour, nor need of the air in a current, ere the ice is in as close a contact with a large body of air th a large body of sand.

w, when I ventilated the first ice-house, and when I advised d ice-house to be ventilated, I could not get the air one- so near to the body of ice as Mr. Thomson has it. The nt was, and must have been, far away from the body of the those who know the arrangements about these old ice- well know. The ventilation could only take along in rrent the vapour after it rose from the sides of the ice down in the ice-well to the level of the side door into the The current was constant day and night, but not one le of the air in that current came, or could come, in con- ith one particle of the ice; and whether that current was or at 90°, it could not make the smallest appreciable nce to the ice farther than that the warmer degree sucked vapour over the ice with ten times more greediness. Then armest must have been the best degree for saving the ice, put it; but the way it acted was second-hand, as it were— vented the vapour from rising to the roof where formerly sed a constant drip to fall down on the ice, which drip and vapour was, and is yet, the great fault of the old ice-

ust confess to having baited my hook for salmon fresh the mountain stream when I spoke of the ventilation gh the air-drain, and I consider I was most fortunate in g such so-many pounders as Mr. Robson and Mr. son. I said, and there you may see and read it, that I not have an air-trap in next the ice, but out next the open I had some faint hopes that some would take that as part e system of ventilation day and night through the upper ge, and my good luck soon brought my hopes to pass. if you will show by any word or sentence I ever wrote ventilating an ice-house that I contemplated, or advised, ore degree of heat to reach the ice that way than the rest there shall be a difference between us, but not till then. A gale passing constantly through a ventilated ice-house, as mmend it, even in the dog days, could no more reach the impart cold or warmth to it, than if it were a dead lull all me; and my air-trap at the open-air end of the lower drain be worked as I thought best, which was the way I put it on to raise the wind and to have a chat and chirrup the ice question.

en I am outside of a house or place which I want to be er or cooler, and I have the power of the ventilation in n hands as in the air-trap at the outer end of the waste- , I would no more admit a particle of air that way on gy day, or on a hot sunny day, than either of my fellow rers would; and there is not a pin's difference between us that relates to ventilating ice, or, which is the right and r way of expressing it, in all that relates to the keeping off earing away damp air from the sides and roof of an ice-

t Mr. Robson and Mr. Thomson are both right and both about the effects of heat on ice, and the effects of strong nts of hot air playing constantly over it—quite wrong, and views are upset every year of our lives in their native land e hand of Nature, and no one can gainsay it. Both of them also gave examples of ice-houses which would not keep ice anyhow—an easy thing from any county in the kingdom, and both blame the wet for the melting; and if I should go and get rid of that wet by a strong current of air between the source of wet and the ice without affecting the ice itself, they both would blow at me with the garden-engine till I had enough of it, and when I had I would just tell them how near we all of us were to the mark without knowing it.

There is an old plan and a very good one, however, which would cure such ice-houses as run to waste from damp in the soil next to them, and that remedy is exactly the same in principle as mine for drying off stagnant vapour. There are a figure of it and the description in one of the early volumes of the "Gardener's Magazine." The plan is to work up outside the walls of an ice-house a puddle of clay 1 foot to 18 inches wide all round and over the top. That would be easier and less expensive than double walls, although nothing is so good a nonconductor for us gardeners as a column of confined air; but the difficulty of keeping the air dry between the very best Middlesex stock bricks is just as great as that of keeping ice from melting, as I can show from my own experience with hollow walls. I once had a range of cold pits with hollow-brick walls, which were before my time used for Melons and Cucumbers, and the linings for the Melons and Cucumbers were found to do as was intended; but when I used them for cold pits they were not so easily kept warm as the solid walls of other pits, and I had them altered, and in doing that I found the tide-marks of the damp air between the walls sure enough, and the pits were more easily kept warm after the alteration to solid walls. Ever since I have been jealous of letting damp linings be used against hollow walls for cold pits, but linings of dry stubble from the corn fields to hollow walls is one of the best means of making cold pits hold out against cold and damp.

One of the most convincing proofs I can give to show that there is not a shade of difference between my ideas of keeping ice and those expressed by Mr. Thomson is this: The last ice-house in which I could not keep ice till I had it ventilated, was made in a sand-bank exactly like the sand-bank in which he finds the ice to hold so well and so long. In one part of the bank we had pure white sand, as good for ordinary propagation as the Reigate sand; but where the ice-house stood the sand was not so purely white. I used to say at a venture, and I said it to scores of people as well as to the owner, that if, in the first instance, they had made the opening in the bank and had not bricked it up, the ice would keep better facing the sand than against the bricks, because the sand would suck the moisture as fast as it flowed, whereas the bricks confined it, and thus caused the air next to the ice to be in constant vapour. But I was not so confident of the fact as I am now after hearing the proof-of-the-pudding way from Mr. Thomson. The fact itself, however, is worth all the pains and penalties which are likely to result from what might be taken as opposite views of so simple a thing as keeping ice; and if I should ever be able to go and eat Strawberries and iced cream either at Linton or at Archerfield, I shall relish it all the better in recounting the feats in this tournament; and I do hereby take blame to my own self for not having more clearly defined my meaning about the rays of the sun in a breeze, when telling of how I had seen them preserve the ice in a state of nature. But, after all, if I had done so the thing might not have turned out one-half so well as it is.

Nothing is more dreary than to write week after week, and month after month, and then find after all that every word had been taken as a matter of course about which there could be no two opinions; and I never disguised the fact that I oft and often baited my hook for a "rise" of discussion, if only to see if people took interest or not on what was the subject matter of my tale. It has not been often my lot to get so good a "rise" in such dull weather as this one or two; and the half rise from Mr. Fish, who seemed last week to hesitate between a "rise" and a swallow on the doctrine of taking dog-day heat in contact with stored ice in the breezes of the air, which no one ever dreamed of, save those who mistook my Ben Nevis tale of ice never stored for use. All that we unitedly insist on for the preservation of ice may be quoted from the last article I wrote on the subject at page 349. "Keep damp as much as is possible from ice, and you have done all that can be accomplished on that law, or side of the question. Keep it also as much from heat as is possible, and then there is no more possibility of assisting the keeping of ice." I wrote that on purpose to put Mr. Robson and myself on the same footing, because I had seen that he misunderstood me in the matter of exposed ice and snow to open-air influences; and, as is right it should, it will also put Mr. Thomson and his humble servant in the selfsame boat. I am exactly of the same opinion as Mr. Robson is about the cause of waste in ice; but I am not puzzled as he is about how the cause takes effect—that I well knew from the beginning. I am also exactly of the same opinion as Mr. Thomson is about the cause of waste and the cure of it, and I am wiser now from hearing his peculiar way of cure in the deep hollow of a loose sandy bank.

If ever the subject is again before us, let it be distinctly understood that no one can alter the degree of heat or cold in an old-fashioned ice-house by ventilating it through the side passages, and through the usual side door to the well, and up and out at the centre of the dome. I never could alter the temperature of that house one single degree, and I had four thermometers in four different parts of the house and passage for full five years. I said it was made more a game-border than anything else. I also made it an experimental fruit-room, and I took Peaches out of it in April along with pheasants, as fresh as the Peaches were in September, and the pheasants on the last lawful shooting-days. I attended to the whole personally, and I assert that no one can increase or diminish the degree of heat round the ice in the middle of July or August by the strongest current of air that can be got through the usual passages. I recollect very well being surprised when I made the discovery; but the reason is, that warm air will not descend among cooler air if it can pass off upwards. The ice is much below the bottom of the side door to the ice-well by the time people begin to draw out ice, and it had been always a point with me to advise people to have a foot thick of straw over the top of the ice, which was always dry, and no straw at all facing the sides of the ice which was as constantly damp, or nearly so, under those conditions. How the idea of conveying heat to the ice by a sharp current far above it came to enter the brains of such sensible and so practical observers as my worthy friends, is just as I have surmised above, and it was from an entire misconception of my meaning altogether. Yet, as many might be led by the same route, it is much better as it is to the public, and none of us will ever be the worse for our part of the story. D. Beaton.

A FEW DAYS IN IRELAND.—No. 12.

(*Continued from page* 339.)

GLASNEVIN CEMETERY AND BOTANIC GARDEN.

Glasnevin is distant two miles from Sackville Street, and is as much connected with Dublin on the north as Kensington is with London on the west side. The chief attractions to strangers at present are the well-kept cemetery and the still more beautiful and excellently managed botanic gardens.

We twice passed the cemetery—once late in the afternoon, and again rather early in the morning; and even in the latter time there were not wanting those who were showing their respect for the departed by mourning over their dust, and tending plants, and scattering flowers over their graves. Such an employment can hardly fail to soften and elevate the feelings of the living. In this hard utilitarian age everything should be encouraged that tends to keep a tender, evergreen spot in our hearts ever awake and sensitive to the throbbings of human sympathy. The man is worthy of being alike pitied and condemned who could come from such an employment at the grave of a friend, and then go and commit an act of injustice or of wrong.

The neatness of this cemetery would give a useful lesson to many managers of graveyards in England and Scotland. What would our Irish friends think of us if in one case they saw the sacred spot pastured with sheep, and in another found nothing in the way of flowers but Nettles so rank and luxuriant that finding any particular grave was next to impossible? No doubt this is more in consonance with some minds than the trimmest neatness and the brightest flowers, as being more in unison with the desolation of heart which they feel. Great changes have been and are taking place in this respect for the better on this side of the water. Might not such feelings of sorrow and the extreme of desolation be lessened, if the surroundings reminded survivors [illegible] they mourn had [illegible] been lost but gone before [illegible] perennial [illegible] bright and serene than ours, where the atmosphere is ever pure and never disease nor death-laden? The sigh heaved and the tear shed, whilst the homely flowers are scattered on the lowly grave, may be more relieving and heart-bettering than merely looking at a costly memorial or monumental urn, which only the comparatively rich could erect as a sign of their respect and a proof of their sorrow. Monuments, some simple and others costly, there are here in plenty; but the tower erected to the memory of O'Connell rises high above all others, and forms as conspicuous an object from a distance as the column erected to the memory of Nelson in Sackville Street. This column, or tower, as a memorial of Daniel O'Connell is more massive than beautiful in its proportions, is 160 feet in height, built of whitish granite resting on an octagon of limestone, and surmounted by a cross at the summit. How short the time since the name of O'Connell was on every lip! It did surprise us to find a sort of general reluctance to speak of his deeds. Men have lived whose renown will outlive all monuments. Costly monuments, perishing though they be, will long survive the memory of many they were designed to commemorate. Fame at best is but shortlived. The only heroism and greatness that will survive in the hearts of a people are those identified with goodness.

BOTANIC GARDEN.

Some ten minutes walk will take us from the plants of the cemetery to those of the botanic garden. This beautiful demesne of some thirty acres is the property of the Royal Dublin Society, and is partly maintained by a regular annual grant from Government and an extra grant at times for particular purposes. The garden furnishes specimens for the lectures of the Royal Society and several other scientific bodies. The public is admitted free to the lectures at the garden. Free admission is also given to the public on Mondays, Wednesdays, and Fridays, from twelve to six; and on Saturdays from two to six; and since August, also on the Sunday afternoons during the summer. On Tuesdays and Thursdays visitors are admitted on payment of 6*d*. for grown-up people, and 3*d*. for children.

We can well understand how the gardens should be crowded on fine days, not only on account of its natural beauties, the great interest of its contents, and the high keeping and neatness everywhere perceptible, but also for its many classical and legendary associations. The ground was originally held by the poet Tickell, and here he composed the ballad of "Colin and Lucy." Here he enjoyed the society of Addison, who came to Ireland as Secretary to Lord Sunderland. Amid all the changes in the garden, the favourite walk of Addison has still been preserved with no great alterations. The neighbourhood is also distinguished for the residence of Swift, Parnell the author of the "Hermit," and Brinsley Sheridan, &c. The river Tolka, which bounds the grounds and runs through the village, has been the scene of many a fight and foray, even as far back as the times when the Danes tried to establish themselves in Ireland. From that rivulet the fountain in the flower garden, and all the houses, &c., are supplied with water by means of a water-ram—the first instance when it was accomplished of such a mode being employed in Ireland.

From the obtaining of the ground of the Royal Dublin Society about 1796, and the commencing of operations in earnest, the gardens have been steadily increasing in influence and fame, Mr. Underwood, the first Curator, held the appointment for thirty-six years; and, on his superannuation Mr. Niven was appointed in 1834, and at once commenced many alterations and improvements; and, on his resignation, the same active energy to make the garden worthy of the title "Royal" has been continued since 1838, by the present much-respected Curator, Mr. Moore; so that nothing but greater means are wanted to make this garden second to none of its kind in Europe. The old houses have been mostly removed, and a fine iron curvilinear range substituted at a cost of £5000, built chiefly by Mr. Turner of Dublin; and, on the 13th of September, other houses were undergoing a widening and a repairing process.

We very much regret that we must give a mere outline of the beautiful garden instead of anything worthy of the name of a description. We arrived at it too tired and too late in the evening thoroughly to investigate its beauties; and what added to our disappointment, Mr. Moore, whom we were anxious to see, was from home, and in his absence we felt that the beauties of Glasnevin [illegible] something like Shakespeare's "Hamlet" with the part of Hamlet left out. We fairly counted on half a day at another time; but, owing to the contrariness of railway companies, we were left kicking our heels at a distant station, and reached Dublin only in time for the steamer, instead of at home as we expected—in fact, but for the inquiries about Glasnevin we would have put off the whole matter until another and more fortunate visit.

At the entrance on the S.E. side are very handsome gates, and a nice lodge and a broad piece of gravel in front, with a museum on one side and a lecture-room on the other. North from this gravel is the Curator's house, with a lawn in front. From this broad space of gravel three main walks diverge—one westward through part of the arboretum, rosery, specimen reserve garden, and bending southwards to the horticultural grounds. The second leads northward, past the lawn in front of the Curator's house to part of the flower gardens, and onwards to the main range of houses; or bending westward, you may go through the flower garden and the various arrangements of herbaceous plants until, joining the arboretum on the west, you may turn north to the aquarium. The third walk leads north-eastward, leaving a space of lawn between it and the Curator's house on one side and the boundary on the other, and terminating opposite a lofty octagon house, which may be considered the commencement of the main range of houses. By the sides of this walk are some nice specimens of Araucaria imbricata, Cryptomeria japonica, Taxodium, &c.

The lofty octagon house was originally intended for a fine plant of Araucaria excelsa, and now it contains a fine young thriving plant of that species, and others too tender to thrive out of doors, as Araucaria Cunninghamii, and braziliensis, &c; Cunninghamia sinensis, Dombeya australis, some singular-foliaged Australian plants, and a few others of massive foliage, as Chamæropes humilis. Close to this octagon house is the Victoria regia house with that noble plant in the centre, and Nymphæas and Nelumbiums at the corners, with many other interesting plants, not the least attractive of which is the Vallisneria spiralis, which, when placed under the microscope, shows the sap moving in the interior of the plant.

We now enter upon the main range of curvilinear houses, the first wing of which is 150 feet long, two-thirds of which are devoted to New Holland plants—as Proteas, Banksias, Dryandras, Acacias, and Pea-blooming-like plants without number. A great part of the front shelf of this house was filled with succulents—as Mesembryanthemums, Crassulas, &c., enough to make an enthusiast commence longing. What a fine display such plants would make hanging over rocks on a sunny day! For many amateurs in towns, and who must be at their offices all day, we know of no tribe of plants more interesting for variety of form, and also for beauty of flower; and if frost be merely excluded, no plants require less attention or trouble, as, except for a short time in summer, they can pretty well water themselves if the air is not extra dry. The rest of this wing is devoted to Cape Heaths and their hybrids. Hardenbergias, Kennedyas, &c., are grown as creepers; but the most conspicuous object in this way was a fine plant of Bignonia Cherere, which generally blooms most profusely.

The central house is 40 feet in height, and is devoted to Palms and other fine-foliaged plants of that group. Some of the most conspicuous were Sabal Blackburneana, Latania borbonica, Phœnix dactylifera, Caryota urens, Cocos nucifera, Musas of kinds, Pines, Dragon trees, Bamboos, &c.

The next wing of the range is divided into two parts, the first a Cactus or succulent-house, and the second a stove for tender exotics. In unison with the larger kinds of Cereus, Epiphyllum, &c., are a fine lot of Mammillaria, Echinocactus, Melocactus, Stapelias, Aloes, Haworthias, &c. These are just as well worth the attention of the lovers of the singular and grotesque in form as the succulents already mentioned; and, provided plenty of heat can be given in summer, and a temperature averaging from 48° to 52° in winter, and kept rather dry then, they are so careless of attention that if neglected for some days they will scarcely ever feel it, or upbraid you for it by any languishing looks. No plants will better repay the little attention that is given them, and as a good number of the smaller ones can be held in a little space, there would always be something fresh. We have seen some windows very interesting with Mesembryanthemums alone. These small Cacti would require more heat; but the whole tribe of Cereus and Epiphyllum will do well in windows, except the night-flowering kind of the first; the great points being growth in the early part of summer, as much sun and as little water as possible in autumn, and as dry in winter as just to prevent shrivelling. We hope, after all this, the windows in Dublin will have something green, at least in summer.

The next part of the wing is devoted to a nice collection of stove plants, embracing Cinnamon, Pepper, Arrowroot, Ginger, Banyan tree, Coffee plant, Sugar-cane, the Egyptian Papyrus, and a fine plant of the Astrapæa Wallichii from Madagascar.

In a line with these houses, and surrounded by a hedge, is a pit-and-frame ground; and turning from the southward through the flower-beds we reach another range of houses—the first a Fern and Orchid-house, 100 feet long and 20 feet in width, divided into two or three compartments. Here, in addition to fine Orchids, Venus' Flytraps, Madagascar Lace Plants, Pitcher Plants, Sarracenias, the Ferns of themselves would give work to an enthusiast for a day; there seemed to be no end to their numbers, their varieties, and their beauty. We observed that Pteris argyrea and other newish kinds were springing up all over the place in hundreds. The other parts of the range are devoted to showy plants of tree Rhododendrons, Camellias, Azaleas, Tea plants, Dacridiums, &c.

A small rockery and aquarium is placed in front of this range; and the rest of the pleasure-ground and flower garden joined on south and west sides by the general herbaceous grounds, hardy British plants, and hardy medicinal plants. The flower-beds were partly grouped and partly mixed. We should like to see the herbaceous arrangements at any time, but more especially in May, June, and July. The chief things we had time to notice about them were the excellence of the arrangement, enabling the visitor to look at each plant so conveniently; and then the large massive size of each specimen generally. If herbaceous plants come to be run after, as we prophesy they will, we fear Mr. Moore will have plenty of tantalising longing visitors.

We were not able to see the interesting large aquarium or the horticultural department, and only part of the arboretum, which is scientifically arranged; but we saw enough to be delighted with the arrangement of the grounds, and the easy sweeps of the walks in excellent order, which enabled the visitor to see all the finest specimens without going off the gravel, and yet one walk hardly ever seen from another, unless near the points of junction. We noticed near the houses a fine specimen of the Weeping Willow, the Chinese Paper-plant, and fine plants of Pampas Grass, which was first raised here, and distributed to British and other gardens. To mention interesting specimens would require a list like a catalogue.

Owing to the calcareous subsoil Rhododendrons do not flourish without prepared soil; but the Fir tribes, Cypresses, Arbor Vitæs, and Junipers seemed to be at home. Such young Cypresses as Nordmanniana, &c., were becoming fine plants. A young plant of Picea nobilis was full 20 feet in height, and not to speak of leaders, &c. There are two splendid plants of Pinus Pallasiana, which must be pretty well 60 feet in height, and which have been planted about sixty-five years. The whole of the hardy tree and shrub department is not only interesting to the botanical student and most instructive to the young gardener, but of great importance to visitors possessed of grounds, as here they can form a good idea of what will suit them, whether their demesne be a single rood or a thousand acres.

The whole of the departments, even those where horticultural cropping and experiments are conducted, are essential to carry out the design contemplated—alike a botanic garden and a suitable manufactory for rearing and sending out over the country intelligent young gardeners. From a most interesting popular hand-book of the gardens, prepared by Mr. Moore, I learned that the young men employed were chiefly of two classes. First, those who had already studied several years in good gardens and came to be farther accomplished in practical botany and general gardening. These are admitted for two years, and are employed one year in the houses and one year in the grounds. These are lodged in the gardens so as to be under complete supervision. The other class are regular apprentices, who are also lodged in the gardens, have access to a good library, &c. These latter to be gentlemen's gardeners, we presume, will travel to some good gardens and be employed there to learn what is wanted in well-regulated private establishments. It was supposed that a third class might be formed—viz., one that would give their labour without wages in exchange for the instruction received. But as yet none have entered that class; and until a higher remuneration is given to intelligent and scientific as well as practical gardeners, there is little chance of such a class ever becoming numerous. So long as men can be found combining a fair knowledge of flowers and practical gardening, with many of the acquirements of the artist, the architect, the landscape gardener, and the philosopher, and making all these contribute to the comfort and the satisfaction of their employers, and then besides the knowledge that their services are valued and so far appreciated, receiving in remuneration little more than a bricklayer's labourer in London—men of intelligence and push will think twice before they thus sacrifice, as it were, a year or two of their lives, and ask if it would not be better to take their industry and knowledge to a better-paying market.

The opening of these gardens on the Sabbath has been a new feature this season. Some of our legislators agitated the subject in Parliament last session, and as much as stated that unless the gardens were so open to the public they would oppose the usual grant being given. Whatever objections might exist to such opening, the opportunity was embraced by the people. We find in the *Times* of the 9th of December an extract from a report furnished by Mr. Moore to the Council of the Royal Society of Dublin, that from the opening of the Gardens on the 18th of August, for twelve Sundays in all, there had been 78,132 visitors, and that the highest number on a single day was on the 6th of October, when there were 15,000 persons. He testifies "that the results are of a very satisfactory character, the people conducted themselves in the most orderly and decorous manner. Owing to the narrowness of the passages in the hothouses some pots were knocked down, and some valuable plants injured; but this was unavoidable from the thronging on some occasions. In connection with the conduct of the people, it may be mentioned that not a single case of delinquency was brought before the magistrates by the police.

It is most gratifying to find from such a report that our Irish friends, when their honour is appealed to, are quite as trustworthy as their English brethren. From anything that appears to the contrary, the managers seem to be in favour of such openings on the Sunday. Certainly, if any places, except those for religious worship, are open at all, it should be such paradises, addressing us from every aspect by the beautiful in nature and art to shun and avoid degrading and debasing pleasures.

We found, however, at several places that this opening on the Sabbath was not looked upon with unmixed satisfaction. One argument used was that it deprived so many men for the whole day from obtaining the religious privileges of public worship. I am not aware how far this could be met in such a neighbourhood as that of Dublin. Some people even advocate the opening of private gardens on a part of the Sunday: such a thing if at all general would soon become intolerable; there would be no Sabbath of rest for the gardener. In some places there is little rest as it is, as, we believe merely from want of consideration, some employers make it the chief day for seeing their gardeners. When half-holidays shall become more general, any claims for such openings will lose much of their force. The public with its acknowledged rights and power should use its spiriting gently, so that the greatest amount of pleasure and advantage may be obtained at the smallest amount of inroad upon the rights and consciences of others. We have no doubt the gentlemen mean well in general who advocate the opening of museums, gardens, &c., on Sunday as a means of educating and elevating us of the working classes; the difficulty would be to find in common justice a stopping-place. We fear that in some cases the "elevation of the masses" is merely the cloak for getting money out of them. There can at any rate be no harm in testing the sincerity of such benevolence by insisting—if such openings there are to be, there shall be no moneytakers, but all shall be free.

R. FISH.

REGULATING NEGLECTED WALL FRUIT TREES.

I HAVE just entered upon a villa with a garden, surrounded by a low wall about 8 feet high. This wall is pretty well stocked with trees—Apricot, Peach, Nectarine, and Plum; but all trained, or rather untrained, after the following fashion: Two or three main stems running up to the top of the wall, thick and bare; a few small branches extending from them fan-shape, but at the top a whole thicket of wood, which the pruner has cut straight off just above the top of the wall. Now I have cut out some of the thick bare wood near the top, and brought the trees [illegible] top of the wall, but they will seem [illegible] [illegible] What shape am I to try to bring them into, fan-shape or horizontal?—F.

[We fear from your account that the Peach and Nectarine trees which have been growing against a low wall and merely cropped off at the top of it like a clipped hedge, can never be made nice, fruitful, and shapely trees. The Apricots and Plum trees may perhaps submit with more grace to the pruning-knife and skilful trainer. It would, therefore, perhaps be better to destroy a part if not the whole of the Peach and Nectarine trees, and plant young ones, removing the old soil and supplying fresh mould to plant them in at the same time; or, if you prefer retaining some of the old trees, the best way is to train them as a low-spreading fan, keeping some of the strongest and most robust branches as low as possible—even if only a foot from the ground it would be as well, as there will be plenty of shoots from the upper side. If the trees show signs of having been unusually vigorous and gross, dig down, and prune the roots by cutting off the points rather severely, so as to moderate the growth the ensuing season. The same remarks apply to Apricot and Plum trees; only as both these answer very well trained on the spur system, perhaps some of the old wood will allow of that being done at once. But as all stone fruit are impatient of much knife work, it is better not to be too severe. You mention your wall as being low. The trees on that account ought to be further apart, to allow them to spread laterally when there is not much room upwards. But in all likelihood some new trees will be wanted, as old neglected specimens of stone fruits are difficult to bring round again. Pears and Apples might be done easily enough, and would be better than young trees; and horizontal training would just be the thing for them. But stone fruits are not so easily worked into that shape, or rather they do not bear so well when they are trained to that form, as now and then promising shoots of the preceding year being laid in amongst older wood answer well in the fan-shaped tree, but disfigure the horizontal-trained one. We hope your border is all right, and the neighbourhood of your postmark indicated it to be dry enough—a qualification which you must not increase with a vengeance by overcropping the border. You will see what has previously been said on this subject in THE JOURNAL OF HORTICULTURE.]

STOVE PLANTS IN A GREENHOUSE.

A CORRESPONDENT in a late Number speaks of having removed several of his stove plants into his greenhouse, and finds them do very well. I have done the same this winter; of course, placing them in the warmest part. They all look well at present, except a small Tamarind tree, which I raised from a stone. This looks very bad in the winter, even when kept in a warmer house. The name of the plants brought into my conservatory in November are as follows:—Two seedling Date Palms, Rivina tinctoria, Hibiscus rosea sinensis, Jasminum sambac, Hoya bella, H. Paxtoni, Guava, Begonia manicata, B. fuchsioides, B. Saundersoniæ, Rhyncospermum jasminoides, Eranthemum pulchellum, Clerodendron fragrans, Caladiums, Poinsettia pulcherrima, &c.—CLERICUS.

BOILER HEATING SLOWLY.

I HAVE one of the old-fashioned conical boilers which heats three houses, and I have great difficulty in keeping out the frost in very sharp nights, as it takes three hours to get the pipes warm. I think the boiler is not set right, it being set at the back of the fire-hole: therefore it only gets a small portion of the fire, as the fire-hole is 18 inches long from the door to the boiler, there being a thick iron plate at the top of the fire, which takes the greatest quantity of heat to no purpose. The smoke passes up at the back of the furnace into a flue that circles the top part of the boiler, and leads to a chimney: therefore there is a very small portion of the boiler exposed to the action of the fire. I think the outside of the boiler should be exposed to the fire to a certain extent—say half-way up, similar to a copper furnace, then bring it into a small flue round the top of the boiler into the chimney.—P. W. M.

[The mere fact of the length of the fireplace does not prove that the boiler is set wrong. Very likely it was intended as a [illegible] for fuel, and the heat will be sure to go forward; that [illegible] should [illegible] as much of the surface of the boiler as possible. No easier plan for setting a conical boiler can be than to set it high enough on piers of lumps, so that the fire shall play not only on the inside but the outside of the boiler. It would stand then, as it were, in the middle of the furnace; and if the bricks surrounding it, which would, of course, absorb and radiate heat, had a hollow space of 4 inches or so all round between them and the next wall of brick, little heat would be lost. The neck of the flue should be small, and a damper a short way from the furnace to throw back the heat on the boiler.

There is no more accounting for the freak of the Camellia you name than for obtaining two or three distinct colours from the graft of a Laburnum.]

POTTING ÆRIDES ODORATA AND OTHER ORCHIDS.

I HAVE an Ærides odorata in a No. 12-pot. The roots have run down the outside of the pot, and laid hold of the inverted pot and are in the sand. It has been so for two years. If I shift it into a larger pot, I must break the roots to get them off. What is the best material to pot Orchids in? Should the soil be firm or loose?—A. M.

[There is no necessity for you to break off the roots of your Ærides. You must get a thin-bladed knife, such as artists use to mix their colours with. Pass this blade gently between the roots and the pot they are adhering to. Probably you will find it necessary to break the pot the plant is now growing in. In that case use your knife-blade to detach the roots from the sides. Some care and dexterity will be needed to keep the roots entire; and some may be a little bruised, but preserve all you possibly can, for every root is valuable. The compost for Ærides, Vandas, Saccolabiums and similar Orchids, consists of very fibry peat, scalded to kill the insects and weeds, and when dry break it into pieces about the size of a hen's egg; then sphagnum moss chopped moderately fine, and the dust sifted out of it. To these add some charcoal, not broken too fine nor left in pieces larger than a walnut. Let the proportions be two of fibry peat, two of sphagnum, and one of charcoal. In potting, choose a much larger pot, place a layer of large pieces of broken pots over the bottom, upon them put a second layer of smaller pieces, and a third layer of broken pots about the size of horsebeans. This drainage should occupy about one-third of the depth of the pot; upon it put some of the roughest parts of the compost. Then introduce the roots of the Ærides into the pot, keeping the plant well up above the rim of the pot. Work in the compost amongst the roots carefully, so as not to injure them, press it down firmly, as it goes in, and so proceed till the pot is full. Heap it up in the centre, leaving it a moderate-sized hillock, which will cause the superfluous water to run off at the sides. Wet in the centre of these plants is very injurious to them. When the operation of potting is finished, have ready some tepid soft water—that is, heated to about 80°. Take your syringe, fill it with this warm water, and forcibly eject the water on the compost all around it. This will sodden down the soil, and give it a compact neat appearance. Then place your plant in a temperature of 75° to 80°, and it immediately begins to send out fresh roots, and will grow away at once satisfactorily, providing a due degree of moisture is kept up. All the points of after-culture you may obtain from the "Orchid Manual" price 2*s.* 6*d.*, by T. Appleby. Procurable at any respectable bookseller's, or direct from the office, 162, Fleet Street, London.]

PRESERVING ICE.

IN my suggestions upon ice-keeping, &c., in THE JOURNAL OF HORTICULTURE, there is an error, possibly an omission of my own, in page 336, where it states I filled a similar place, &c., on boxing-day, 1859; it should be 1860.

In the same Number further suggestions on the keeping ice, so to say, out of doors are invited by one of your able correspondents; and, although, having explained a practical mode of so doing previously, I will here state how it is still further a possibility that this way may yet be the more proper way than the old one.

Firstly, I will refer to one of the best so-called ice-houses that ever came under my notice. It was situated in South Wales, at Dynevor Castle, the seat of the peer of that name. It differed not in form from all others of the old make, save in being so exceedingly substantial. The interior was in reality in the bowels of the earth or mountain, and beneath stupendous timber where rooks reared their young; and yet this place did not keep ice. It was well filled with a hundred loads; straw was used in abundance; and as it had a long passage from the outside to the interior, it was, presumingly for the better preservation of the ice within, filled as firm and as full as possible with straw, fern, &c. Each time ice was wanted, so often was this passage unfilled and refilled; yet this proved of no utility. The then gardener left; and his successor, at considerable trouble, had a hole made communicating from the roof to the interior, upon which was placed a large trap-door. The doorway was served in the same way. Air, a current of the same, shot right through, and since that place has kept ice better. I adhere to it, that a cavern so highly charged with still, moist air is a sure destructive to ice.

This brings me back to the subject of straw as being the best medium between ice and air, if placed in sufficient quantity as I directed last week. Here is another mode, with which between thirty and forty loads of ice, with periodical use, were kept during the past summer at the back of a north wall. Make a slight ditch, in the middle of which make a dumb well some 2 feet all ways; make a straw wall, as described before, some 6 feet from the wall, fill it some 7 feet or 9 feet high. When done, make straw walls at each end, and cover in with a roof. Good wheat straw in thickness should be laid in between the ice and the hurdles which constitute the support of the same.

Again, in Oxfordshire I have seen to the placing of a hundred loads or so in a huge pit dug in the ground—the same being gravel, nothing being placed between it and the ice but a good layer of straw; to keep the wet from it, a thatch was placed upon posts plunged in the ground, at equal distances all round. The vacancies between these posts were also thatched in; but the pit, not being bricked or otherwise, crumbled in at each of the vacant places between the posts, leaving naturally formed air-holes, some 12 inches without any drainage, save the most effective possible—a good gravel bottom. We never had any idea of the ice not keeping. It was considered such a well-finished job at all times, the noble harvest never failed to give, what the men called, an ice-harvest-home. I knew a plum pudding placed upon that ice-house-filling table, once upon a time, weighing little short of 26 lbs.—W. EARLEY.

GISHURST COMPOUND.

WE believe there is no discovery that has been introduced for the benefit of gardening and gardeners which has been so much misunderstood as Gishurst Compound and its application. Some apply it in too weak a state, and, of course, they fail to attain the desired result; others err in the opposite direction, and by applying it too strong destroy or injure their plants, and thus they fail. There is another class who say, "It is a valuable thing, and I use it constantly wherever it is required; but it soils the plants so, mine appear as if they had been whitewashed." Now, all these inconveniences arise entirely from mismanagement and ignorance of the nature of the substance.

The following communication will show how it ought to be applied to trees during their season of rest, and we have frequently stated that 2 ozs. to the gallon are sufficient for plants in a growing state. To obviate the effect of stains on the foliage, it is only necessary to dissolve the Compound twelve hours before it is required, allow the solid parts to settle at the bottom of the vessel, and when it is to be used pour off the clear solution into another vessel, leaving the sediment behind. This will effectually prevent the application from staining the foliage.—[EDS. J. OF H.]

"The mode of using Gishurst which I have found most advantageous with my own trees, is to take—say 3 lbs.; throw this into an earthenware pan or large pail containing about six gallons of nearly boiling water. Stir up and let this remain for forty-eight hours, by which time the strength of the smell will have passed off; then apply, by means of a full-sized painter's brush, over buds, shoots, branches, and stem, giving especial care at the forks, till the whole tree is in a white lather.

"This winter dressing may be applied from the time trees go to rest in autumn till the time the buds begin to open in spring; after that time the above strength of solution would be too great, as injury would be done to the blossoms. From one to two ounces to the gallon are then found the best strength.—G. W."

WINTER-DRESSING OF WALL TREES.

ALL good gardeners know well the benefit such wall trees as Peaches, Nectarines, Cherries, and Plums derive from having a winter-dressing or painting. The mixture generally employed is, I believe, lime, soot, soft soap, and sulphur, made with water into the consistence of thin paint, and every shoot and bud covered with it. This has an excellent effect, and the trees in spring are not so liable to the attacks of insects, or "blight," as it is often called. I never remember to have heard of a more remarkable instance of the effect of a winter-dressing than was given me last autumn by a clever gardener friend living at Winchcomb Court, near Gloucester. In the autumn of 1860, after the cold wet summer, his Peach trees were in a wretched state, the ends of the shoots curled, and the trees seeming as if they could not regain their health. Not knowing any composition fit for the purpose, and having used Gishurst Compound to his orchard-house trees, he determined to give his wall trees a strong dose by dissolving 1 lb. of the Compound to the gallon of water, and painting them with it. He operated on all but one of his Peach and Nectarine trees, leaving that untouched merely to see if any difference would be seen in spring between the dressed trees and the tree undressed. This proved to be most remarkable; the dressed trees broke into leaf healthily and vigorously, and during the summer entirely recovered from their blighted weakly state of health. The tree left undressed broke into leaf languidly in comparison, remained weakly all the summer, and is now in a poor state; the difference between it and its neighbour is very remarkable.

As a winter dressing (the trees should be painted all over) for Apple trees in gardens—such as espaliers, pyramids, or bushes infested with the American blight—the Gishurst Compound, 1 lb. to the gallon of water, which should always be soft, is a most effectual cure. Soft soap, 4 lbs. to the gallon of water, is also a capital remedy for this pest. All these compositions should be applied with a painter's brush, and every crevice filled.—T. R.

SOWING MISTLETOE.

DURING the last two years I have not found any Mistletoe berries containing seeds, but this year they seem to be frequent. As this may be the case in other localities, may I call the attention of your readers to a communication from "CYGNET," in THE COTTAGE GARDENER of December 7th, 1858, with the hope that some may be induced to follow his directions and watch the growth of this curious plant?

Mistletoe culture requires some patience, as far as my experience goes. Interested by "CYGNET'S" account, in February, 1859, when our Christmas decorations were removed, I collected all the Mistletoe berries, and squeezing out the seeds, placed them upon various trees in my garden. A few dried up and fell off, and several adhered firmly (the first sign of growth), but from different accidents only one survived the following winter. This one, set upon a double-flowered Apple, for months only looked green, and stuck very closely to the bark. The glutinous substance quickly dried, leaving a clean, hard seed, which towards the end of the autumn threw out two little suckers, one on each side, which fixed upon the bark. In this state the seed remained all through 1860. In May, 1861, after an absence from home of some months, I examined my Mistletoe and found the seed-case lifted up and enclosing four leaves (each sucker, or, as it turned out, each stem, bearing two). I pulled off the shell, and this season the twin "bough" has been growing comparatively rapidly, as each stem now bears four leaves—in fact, there are now two promising little plants of Mistletoe growing rather more than half an inch apart, and a little bud has made its appearance at the base of one. Some of the berries which I placed upon an Oak were growing when they were inadvertently cut off.—FELIXSTOWE.

[More of the Mistletoe seeds probably would have vegetated i a small tongue of the bark on the underside of [illegible] branch had [illegible] raised and a see[illegible] beneath it.

TO PROTECT TREES [illegible]

[illegible] writes in the Americ[illegible] [illegible]tleman that a good way [illegible] prevent rabbits from injuring [illegible] winter is to take narrow [illegible] of cotton cloth a yard [illegible] long (old cloth will do), [illegible] body till you get above the reach of the rabbits, and there tie it. Remove in spring, dry and put away for another season. If well cared for these strips will last a number of years, or as long as the tree will need protection.

BIRDS AND BUDS.

I AM a great lover of birds, and a friend to them at most seasons; but I must confess that my ire is aroused in winter and early spring when I see Bullfinches and Sparrows stripping the fruit trees of their buds. I then become their enemy and have them destroyed. An old naturalist, a near neighbour, will persist in asserting that in all the Cherry-buds destroyed by master Bully (what a beautiful fellow the male bird is, and how impudently and coolly he rapidly strips your May Duke Cherry tree, looking so innocent the while!), there is a "small green caterpillar," which, if the bud were not eaten, would assuredly destroy it. I am half inclined to think this idea is assumed, for he has never yet shown me one of the caterpillar buds, and I have never found one. The matter is rather difficult to prove, for Bully eats the very heart of the bud, and scatters the outer coverings on the ground, with many entire buds which he knocks off while at work. These, of course, offer no proof, for he has not eaten them; and my friend therefore assumes that he leaves them because there is no "worm i' the bud."

To arrive at something near the truth, I have lately narrowly watched my May Duke Cherry trees, some of which growing in a rather sheltered place a short distance from the house have been literally stripped of all their fruit-buds by Bullfinches; while others of the same age and size growing near the windows of two of my rooms, and so exposed that no bird can alight on them without being seen, while the constant passing of people by the path that runs through the lawn nearly all the day has tended to disturb birds of all kinds, are still covered with their plump blossom-buds. Well, on these trees I have endeavoured to find buds with the "small green caterpillar" inside, and I can honestly state that I have not found one. My gunner has this winter shot between three and four dozen of Bullfinches, for which I have paid him 2*s*. per dozen. If they had not been destroyed, I firmly believe that all the blossom-buds on my Cherry and Plum trees, except those protected by growing very near to my house, would have been destroyed.

Sparrows are more destructive to the buds of Gooseberry and Currant trees than to others; but they, the trees, are very easily protected by taking some refuse hay, shaking it up and wetting it, and then scattering it over the bushes, so that it clings to the shoots and branches. This is best done after the trees are pruned, and may remain on till the buds have burst into leaf; not a bud will be touched if this simple method of protection is employed. As to shooting Sparrows it would be endless work, and to poison them with the Wheat sold for that purpose requires much care. You may feed them for eight or ten days with sound Wheat, and then give them a batch of the poisoned; by this means you may destroy a considerable number, but their sagacity when the poisoned Wheat is thrown down in the usual way is most remarkable. Last spring in the breeding time I scattered some poisoned Wheat near the stable-door; two or three male birds fell victims the first day or so, from being, I suppose, anxious to take food to their young in the nests, but after that they would not touch it; and they even, by some wonderful instinct, taught their young ones to avoid it, for I have seen the old birds with their brood seeking for food among the stable manure among which I had placed poisoned Wheat, and not touching a grain of it. A still more striking proof of the sagacity of Sparrows, I have this moment heard from a farmer, a neighbour, not at all of a romantic turn of mind.

In the winter of 1859 he was much annoyed by hosts of Sparrows, and although not a Sparrow-destroyer his patience was exhausted. He therefore fed them abundantly for some eight or ten days, scattering the Wheat under an old Yew tree, where the ground was free from snow. They came regularly every morning to be fed, and became almost tame as they flocked to the tree on hearing his whistle. At last came the fatal morn. The strychnined Wheat was strewed under the tree instead of their usual supply; they commenced to eat in their usual hearty manner, and then came death and sickness. Many scores [illegible] picked up dead, the ground being strewn with them;

many escaped with a slight attack of seeming paralysis and sickness, having perhaps swallowed only a single grain. They were wise enough to tell their neighbours, and no more poisoned Wheat would they touch. In the following winter, 1860, my neighbour tried the same "dodge;" the sparrows came on the tree, looked askew, or, as my neighbour says, "cocked their eyes at the Wheat," and walked, or rather flew off to consult their friends. The result was they came in numbers, few and far between, to eat the sound Wheat; and at the allotted time when the poisoned Wheat was strewed they quitted in disgust, leaving only a few victims which were either too hungry or too silly to listen to the advice of their experienced friends.—FRINGILLA.

RABBITS BARKING YOUNG FRUIT TREES.

I WAS very much chagrined on going into the garden one morning lately during the severe frost we then had to find several fine young fruit trees, wall as well as standards, barked by these vermin—in particular one Green Gage Plum fully trained, fan form, very healthy, and coming into bearing. A portion of the main stem about 8 inches up from the graft barked, several of the lower branches partially so, three or four of the lower badly; fruit-spurs bitten off, and points munched up. I know you will sympathise with me. What am I to do? Cut far back the lower branches I anticipate you to advise; but may I retain those with the points safe? Will the tree yet thrive? and what appliance would you recommend me for the main stem and branches retained? On seeing the state of matters I raised a mound of earth all round over the wounds to exclude the frost. Could you specify anything to apply to the stems of young fruit trees that will prevent rabbits barking them? as they must have got in from the lower part of the garden unwalled—a Beech-hedge fence. The most effectual, though expensive, plan would be to wire it all. What number or size of wire is most useful, its height, and what would be the best mode of supporting the wire?—AN ANXIOUS INQUIRER.

[We sympathise with you most sincerely from fellow-feelings. Rabbits were the marplots with us, and we are quite certain that all the nasty-smelling things in all the sewers of the kingdom or out of them will not long keep back a colony of starving rabbits from gnawing the bark of trees from sheer hunger, and another colony of these vermin, high fed, from doing it from sheer wantonness. Nothing is effectual against rabbits long together but fencing them off, and galvanised wire netting 18 inches wide would be the best, and cheapest in the long run, and along a hedge that width would be wide enough. The wire might be fastened to stakes or iron rods.]

MANAGING PLANTS IN A WARDIAN CASE.

I WISH to know how I am to manage my Wardian Case; it has four sides and a span roof, and a door to open at each end. In coming from London, about two months ago, the Case was turned completely over, and the Ferns almost buried. I restored them as well as I could. Some are doing well; but the earth gets covered with mildew, and most of the Ferns also. I keep the Case in the dining-room window; but I am thinking of moving it to the conservatory as being warmer for it, as I fancy it is damp cold that affects it. Please to let me know the best treatment.—L. J. L.

[It is want of air and sunlight that causes your Ferns and the soil to mildew; or, perhaps, you keep the soil too wet. You had better take the Ferns carefully up and cover the balls with soil to keep them moist; then procure some nice dryish turfy loam, leaf mould, and fibry peat, in equal parts, mix them thoroughly, breaking the lumps, if any, with the hand, but do not sift the compost; add some broken pieces of charcoal in proportion of about one-eighth of the whole. Fill the Case to the proper height with this compost, and replant the Ferns; if you choose you may place a few pieces of pumice-stone on the surface—it is an absorbent of damp. Then give a good watering, and keep the Case close for a day or two, watching that the damp is not excessive; provide for giving plenty of air daily. The small door at each end is not sufficient for air in dark damp weather; the whole roof ought to be moveable, so that it could be lifted off entirely for a few hours once a-week. By having such a roof so moveable you would be able completely to dry the inside glass, the leaves of the Ferns, and the surface of the soil; and, besides that, you could more conveniently have access to the plants to water and to take away decaying fronds and weeds, and to stir up the surface of the soil—all necessary operations for plants in any house or case, whether large or small.

Till the plants recover from their shifting and have made fresh fronds, your conservatory would be a suitable position for your Wardian Case. In any place whenever you observe dew on the glass, it is a sign or guide to you to give air directly till the inside temperature is the same as the room in which the Case stands. When the temperatures are equal there will be no deposit of moisture on the glass.]

HEATING BY GAS.

ALLOW me to ask you to enlighten me as regards the gas-burner described by "W. X. W.," in your Journal, p. 314-5. I have been for many years in the habit of using iron-wire gauze for burning gas in the way he refers to, and instead of a ring of jets, simply used a common gas-tap opening upwards in a cylinder of wrought iron 3 inches in diameter, upon the top of which was fixed, in a ring of the same diameter, the wire gauze, and it was by its own tightness secured externally to the cylinder. I found, however, that the heat was uncertain, and that the light occasionally, perhaps from want of adjustment, or altering the pressure at the gasworks, had descended to the tap and choked the wire gauze with soot. I have now come to the point which the communication of "W. X. W." leaves me in doubt about. He says that "a sheet of copper-wire gauze is to be confined in a ring or belt of about 3 inches circumference." I presume that the sheet referred to will be 1 inch diameter. "The belt is about 3 inches broad, and is suspended over a ring of jets." The article is one of great importance, and I fear that justice will not be done to his careful investigations if any typographical error has made them a little incomprehensible.—EDWARD QUIKETT.

[The word "circumference" is a mistake, it ought to be 3 inches in "diameter." I am much obliged to Mr. Quikett for pointing out the error. I have once or twice been troubled by the light descending to the ring of jets below the gauze, and found that it was owing to a defect in the gauze; also, from the ring over the gauze not being tight, and in one case from an insufficiency of air. Mr. Quikett ought to have a regulator to check irregular pressure. I consider it absolutely necessary, and a properly constructed one will effect a saving of thirty to fifty per cent. of the gas consumed.—W. X. W.]

PROPAGATION OF PLANTS BY THE MILLION.

HAVING been much interested with Mr. Beaton's Propagation for the Million, in your Number of October 1st, would you kindly answer a question concerning it in your next? Towards the end of that article Mr. Beaton says—"The cases would be merely upright pots without bottoms, and I could use them constantly in two ways—put some of my best seedlings in pots, case and putty, and put them on water; or make a ring with the top or bottom of a case on the south border, fill within the ring with cuttings, put the case over the cuttings, and a piece of glass over the top, and what would be the difference between that and my tops and bottoms?" Now, I cannot exactly see from this, whether the piece of glass on the top is to be fixed air-tight with putty, or merely placed loosely on.—B. G. S.

[Next May will be the time for the grand movement, when millions of pots are set free by "planting out." Then all the pots which are to hold forth plants for the million against the best gardeners of the age, will be each put inside another pot, so as the rim of the plant-pot or inner one rests just within the mouth of the outer pot and no more. Then the rims of the two pots will stand the fourth of an inch apart, and what little space is left open between the two rims will be filled by a bit of common clay about the size of a child's marble, but first worked between the palms of the hand till it is as soft and pliable as putty. The hole in the bottom of the outer pot will be made double the usual size with a few careful strokes of the hammer. But the aristocratic way of doing all that for the few, will be to make outer pots on purpose without bottoms at all, and to be all glazed inside and outside, like glazed big pipes for drainage. These bottomless pots, and imitations of them, are to be the grand move for the million for striking all sorts of things under them in June, July, August, and September, and from then for Roses and ever so many kinds of shrubs and woody plants and climbers during and throughout the whole of the winter, next spring and on to soft summer-propagation again, and the bottomless will have the bottom ends uppermost, and a loose piece of glass and no putty will be the cover to keep the air pretty tight within, but not to exclude it altogether—a system that needs gardeners to look after it. This system hardly wants looking after, only it is not easy to keep oneself from always looking to it.]

MUTILATING YOUNG FRUIT TREES.

I bought some young Apples and Pears, trained and standards, and asked the party from whom I purchased how I was to treat them. He told me to take a little off the point of all the branches; and on inquiring the object of what appeared to me a strange proceeding, causing a development of fruit-spurs and no wood, he said it was to encourage the wood-buds at the base of the branches. So that when I am to cut back, spring come a twelvemonth, I should make sure of plenty of wood. I bought previously a lot of fruit trees like these, finely balanced, and cut back agreeably to special instructions most unwillingly. They grew, but their fine shapes were gone. I have moved and planted hardwooded trees often, and never put a knife on them, they throve finely. Is there any imperative law to cause this mutilation of fruit trees? What would be the result, supposing I kept these symmetrical standard beauties as they are, and the wall ones nailed on, cutting back only the central shoots for more wood? Should I be a great loser by such a cause? Please counsel —A Greenhorn.

[The advice to cut off a little of the points of the shoots of trained fruit trees, and the same from full-headed standards on their being removed from a nursery to your garden, was a very good advice, but the reason for doing it was against all reason. The object to be obtained from that cutting at such a time on such trees, was merely to rule the balancing powers of the roots and branches. In transplanting young healthy trees you cannot get every fibre of root up safe; there must be loss of roots, and most people would think that an advantage for fruit trees, but not for forest trees. If your trees were ours, however, we would not cut off one inch of any one of their branches; but we would mulch the ground over their roots before the hot weather came in, and in October, 1864, we would take every one of them up again and plant them in the same places, but with as many of the roots as we could placed nearer to the surface. We never prune and plant a fruit tree or bush the same day, or the same month.]

NOTES ON A FEW TENDER AQUATICS.

In order to grow stove water plants successfully, a house specially devoted to the purpose is requisite. The house should have a tank or cistern in the centre, elevated a foot or more above the level of the floor, so as to bring the smaller plants the tank may contain more immediately under the eye of the spectator. The water should be heated by one or more hot-water pipes carried through it, so as to maintain the water at a proper degree of heat necessary to their successful growth. Indeed, this is absolutely essential to success, for if the roots are subjected to continual chills failure is certain. The greenhouse species are more hardy, and will stand a little rougher treatment, but the more steady the temperature of the medium in which the roots are placed, the more certain the success, and the greater the perfection to which the plants will attain.

Damasonium.—This genus contains species adapted for both the stove and greenhouse. *D. indicum*, a native of the East Indies, is an herbaceous perennial, with large, broadly cordate leaves growing out of the water; with pretty white flowers, of three broad petaloid segments, solitary, and on stalks rising about a foot or less out of the water. They appear in July and August. This species requires stove heat. Another species, *D. ovalifolium*, does pretty well in a greenhouse, and, like the last, has white flowers rising to about the same height, and appearing in June or July. It is a native of New Holland. Both species should be gr[illegible] in moderate-sized pots of good loamy soil, and be placed [illegible] foot un[illegible] [illegible] They are propagated [illegible] seeds [illegible] division [illegible] the roo[illegible]

Ellobocarpus oleraceus, or Water Fern.—This is a most beautiful plant, producing elegant fronds of upwards of 2 feet in height. There are no flowers, but the fertile fronds usually bear abundance of seeds (spores). The fertile or seed-bearing fronds are more finely lacinated, or cut, than the barren fronds, giving it a very elegant appearance. It is a native of the East Indies. It should be grown in large pots of loamy soil, and set in comparatively shallow water. The readiest mode of propagating is by division of the root.

Byblis liniflora.—This is a greenhouse perennial, of from 5 inches to 6 inches in height, its linear-lanceolate leaves beset with glandular hairs, and bearing blue flowers. It is a native of New Holland. A good, lightish soil suits it admirably, with the pots not more than half immersed in water.

Aponogeton crispum and **monostachyon** are stove species. They are bulbous-rooted, small-growing perennials. The first-named of these is the dwarfer of the two, bearing whitish flowers in July or August. It is a native of Ceylon. *A. monostachyon* has ovate leaves, and produces its flowers, which are of a pinkish hue, in a spike of about 6 inches in height. It flowers from August to the end of September. It is a native of the East Indies. Both species are very handsome. There are two greenhouse species belonging to this genus well deserving of notice, as they are even more handsome than the two I have named, which are stove species—viz., *A. angustifolium*, and *A. distachyon*. The former of these has lanceolate, erect leaves, and a dichotomous spike of white flowers, and when under proper treatment will continue to bloom nearly the whole summer. The other species, *A. distachyon*, has oblong leaves, which float on the surface of the water, and produces its white fragrant flowers for nearly three months in summer. The two last named are natives of the Cape of Good Hope. They should be planted in loamy soil, with a mixture of turfy peat earth, in pretty large pots, and be immersed in about 2 feet of water.

Euryale.—This genus is allied to the Nymphaceæ. *E. ferox* is really a noble-looking plant. The leaves are rotundo-ovate, floating, varying from 1 foot to 3 feet in diameter, according to the luxuriousness of the plant. The stalks of the leaves, as well as the peduncles, or flower-stalks, and the floral envelopes, are all covered with stiff, spiny bristles. The flowers are of a reddish-pink colour. It is indigenous to China and the East Indies. To grow it successfully it should have a rich soil; loam with a mixture of road scrapings grows it well. It should be placed well down in the water. It is propagated by seeds sown in the water.

Oxalis natans, or Floating Wood Sorrel, succeeds very well in a greenhouse. It is a dwarf plant, seldom exceeding 3 inches or 4 inches in height. In appearance it very much resembles the common Wood Sorrel, *Oxalis acetosella*. The leaves are trifoliate, the leaflets obcordate, or inversely heart-shaped. Like the common Wood Sorrel, it produces white flowers till late in autumn. It may be grown in small pots, and if a common flower-pot saucer be filled with water, and the pot containing the plant set into it, it will be sufficient.

What more I have to say on aquatics I shall reserve for another time.—J. Dunn, *Harrock Hall, Lancashire.*

MANAGEMENT OF ICE IN STACKS AND ICE-HOUSES.

As we make advances towards refined civilisation, so do our luxuries become necessary to existence; and there is, perhaps, no more striking proof of this than the demand for ice in the summer months, since this commodity has been placed within reach by the facility of transit, which has brought the solid crystal blocks of Wenham Lake into our shop-windows at midsummer—thus making it common to all. In large establishments in this country the demand for ice is much on the increase, and where an ordinary ice-house was formerly deemed sufficient, two are now filled, and these are aided by large stacks for early use. It has thus become an important part of the gardener's business to secure for his employer an ample quantity; and it is hoped that the following observations connected with the general management of ice for domestic purposes may not be without interest.

In the first place, the source from whence the ice is to be obtained should be, if possible, a broad expanse of water, kept perfectly clear from weeds, and from the falling leaves of trees, [illegible] nothing [illegible] more unsightly than dirty ice. The water, therefore, from which ice is to be procured for family use, should neither be margined nor overhung by trees, which exercise a powerful influence in preventing the surface from freezing, by arresting the radiation of heat. This may be seen any frosty morning; for the exposed portion of a pond will be covered with ice, whilst that which is sheltered by branches will not be so. Having a moderate thickness of clear ice, we will suppose it carted to the ice-house, where it should be minutely broken up, on a clean and solid floor; it cannot be too finely broken, and should be most closely packed and well rammed down in the ice-house. A large house will preserve a larger quantity (in proportion) than a small one, and it is of great importance that the situation be a thoroughly dry one. We find it best also to avoid the old plan of using straw up the sides, because when the material gets damp, it assists, like the wet blanket of the hydropathists, in wasting the body and hastening the departure of the patient. There is an American plan, which has been successfully practised in this country, at Lord Lilford's, in Northamptonshire, and at Lord Jersey's, in Oxfordshire—on the principle of getting rid of humidity; it consists in having a small aperture in the door of the house, to open and shut at pleasure, with a corresponding one in the opposite wall. These doors are opened every night and closed again early in the morning, thus admitting a current of dry cool air, and carrying off the condensed moisture, which would hourly be exerting its wasting influence on the ice. The accompanying sketch shows the plan.

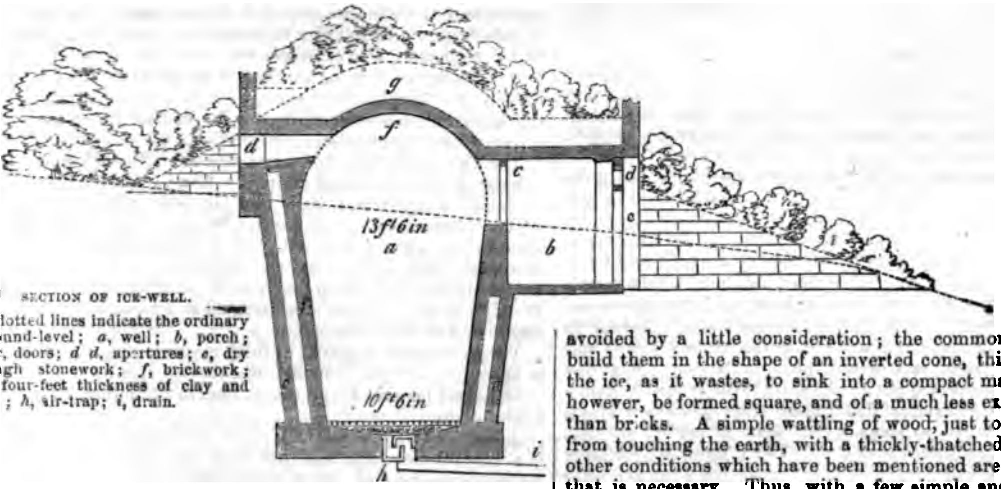
Much waste of ice is occasioned by the incautious and frequent opening of the house. This is to be avoided by the use of ice-preservers, which are now much in request, and which keep the ice for several days without waste. The house should always be opened in the cool of the morning. It will thus be seen that the main points to attain success are, to get clear ice, to pound it almost to powder, and to secure escape for accumulated moisture.

A word in regard to the situation of the ice-house may not be out of place here. It should be screened from the powerful rays of the sun by lofty trees, but may be open to the north, rather than overhung by their branches, which prevents the radiation of the heat which the roof accumulates in hot dry weather, and generates a dampness, which is detrimental however occasioned.

Ice-stacks are made in various forms and of different dimensions, and, for the sake of economy in carriage, generally near the water, upon a sloping bank. I know a gentleman who does not break his ice for stacking, but fills up the interstices with snow and water; but this is a "penny wise and pound foolish" practice, as it is impossible to get it into so compact and solid a mass, or to make all the angles unite, so as to exclude the air. At Berkeley Castle, the seat of Lord Fitzhardinge, there is no ice-house, but the family depend for a large consumption entirely upon an immense stack of two hundred loads, which is annually stored when there is sufficient frost to enable them to do so. The stack has gone on for many years, and has never been known to fail. The situation is on a bank opened to the north, but screened by trees from the south. A platform of large rough flag-stones forms the foundation upon which the ice is broken and piled, in the form of a parallelogram, its section being a triangle, with its base shorter than its sides. When finished, it is covered with about 18 inches of thatch, which is again surrounded by large hurdles thickly thatched. This is opened without scruple as the ice is wanted, and Mr. M'Intosh, the gardener there, says he would not advise any one to build an ice-house; but it is a work of great cost to get together so unlimited a quantity of ice.

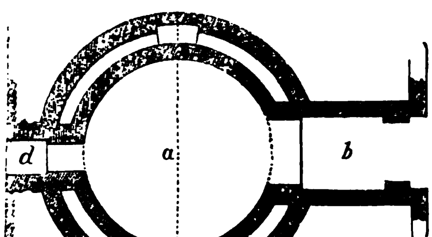
From all I have been able to collect upon the subject of making ice-stacks, I think, in general, that they may be regarded rather as useful auxiliaries than as substitutes for a good ice-house—I say useful auxiliaries, inasmuch as they enable you to postpone the opening of the house till the autumnal months. At Easter and Whitsuntide, when most families resort for a short time to their country seats, some ice is wanted, and if the main stock is opened its wasting is much accelerated.

There should always be a provision for carrying off the water which is collected on the roof of an ice-house, as it should never be allowed to fall on the ground or to saturate the side walls; the best situation for it is on the side of a steep and dry bank.



SECTION OF ICE-WELL.

The dotted lines indicate the ordinary ground-level; *a*, well; *b*, porch; *c c*, doors; *d d*, apertures; *e*, dry rough stonework; *f*, brickwork; *g*, four-feet thickness of clay and soil; *h*, air-trap; *i*, drain.



PLAN OF ICE-WELL.

References same as in Section.

Much expense in the construction of ice-houses might be avoided by a little consideration; the common practice is to build them in the shape of an inverted cone, this form allowing the ice, as it wastes, to sink into a compact mass. They may, however, be formed square, and of a much less expensive material than bricks. A simple wattling of wood, just to prevent the ice from touching the earth, with a thickly-thatched roof, where the other conditions which have been mentioned are fulfilled, are all that is necessary. Thus, with a few simple and comparatively cheap and rustic materials, and a little knowledge of the laws which govern the diffusion of heat by absorption and radiation, the owner of a villa reidence may be enabled to enjoy, in common with the owner of the princely palace, a store of ice, and there can be little doubt but that such will soon be the case.

If the hints here thrown out should be instrumental in promoting this object, the writer will feel that his attention has been directed to a useful end.—H. Bailey, *Nuneham Park*.

NOTES FROM CUMBERLAND.

May I trouble you with the following remarks and questions? I am very fond of flowering shrubs, and get all the good hardy ones that I can meet with.

I happened, in turning over an old volume of your Cottage Gardener, to see a most flaming description of Indigofera dosera (new flowering shrub), *vide* August 10, 1858, page 291: you there describe it as 4 feet high and 6 feet round, and perfectly hardy, certain to become as standing a dish in every collection as a Rose. I now find by looking back to my diary of that date that I then determined to get it when available. I got lists from a great many of the leading firms, and never could find it mentioned until looking over Carter's seed catalogue, which I received last night; it is therein described as greenhouse shrub, 1 foot high. Perhaps Messrs. Paul, where you saw it, might briefly tell us whether it proved hardy or not. It may be lost and gone since your notice.

We have no florist or dealer in ornamental shrubs in this county—none nearer than Edinburgh or Liverpool, each one hundred miles or more distant. We certainly have two or three very fair nurserymen, as far as Larches and Spruce Firs are concerned; but there their knowledge of arboriculture ends. I have sometimes ordered a plant through them, and invariably found that I have paid at least six times the proper price, and generally got the wrong article. A clerical friend of mine, the best florist in the country, made a calculation the other day, and found that if we wanted above £5 worth of good and new things, instead of buying or ordering them at home, we could save a considerable part of it by going to Dicksons of Edinburgh, or any other good firm, there enjoy ourselves for a day or two, see all the best and useful novelties, and bring them away with us. I have frequently spent several pounds going after plants, which, when I found, only cost a few shillings; but I had the satisfaction that I had the real article, besides the opportunity of looking at the bottom of the pots to see if there were any roots or not, which I am sorry to say is not always the case. This county is rapidly improving with respect to gentlemen's seats, &c. In the lake district handsome villas, belonging to retired tradesmen, are springing up like Mushrooms. I have visited several lately, and they all have to get their shrubs from Skirving, of Liverpool, or Peter Lawson, or Dicksons of Edinburgh; certainly they could not deal with more liberal or better people, but it is a long way off. I firmly believe that any enterprising man starting the above business in Cumberland would make an immense fortune (honourably) in a very short time. There is a rumour, certainly, that a very large and excellent firm in the seed and forest-tree line are going to start the florist and ornamental shrub business, and sell at London prices. I wish this may turn out to be the case.

I have had many dealings with Dickson, Downie & Laird, &c., and have always met with the greatest liberality. I also find that any novelty got from the north does better here than the same plant from the London or south country establishments.

About two years ago a gentleman in the train along with me near Edinburgh had a bunch of a plant in his hand which attracted my attention. To be brief, he gave it to me, and I transferred it to my button-hole. He called it Calceolaria violacea. I saw nothing like a Calceolaria about it; but I mentioned it to my friend Mr. Alexander, the head of Dickson's house, who said that the name was correct, and that there was then a splendid plant of it in the Experimental Gardens in Edinburgh. I understood it was not in the trade. I gave half of my sprig to a friend as I passed through Carlisle. Next day I stuck mine into a flower-pot in the greenhouse, it struck immediately, and grew amazingly that season (this was about May). Next spring it began to stagger, but sent up several suckers. Should I then have headed it down? I let a Baronet's gardener in this part grub away at it with his knife for a sucker, after which mine died; and he either lost on his road home, or forgot to plant, the suckers, so I have entirely lost it. I have never seen it advertised in any list, though I have looked for it very carefully. Does it want any more than greenhouse heat? In an old Number of your work, I last night stumbled upon a notice of it, *vide* page 308, July, 1856, "Recollections of Raith." Any account of its treatment would much oblige, as I never saw a more beautiful or useful-looking plant.

I saw some of your correspondents a few weeks back made some enquiries about the Osage Orange. I sowed some seed about three years ago, some from Carter in pots in a frame, the rest from Little and Ballantyne, of Carlisle, in a drill like Peas; I believe every one [illegible] and offered to make a fine hedge very soon. The gard[illegible] being left open some hares rushed in and ate the [illegible] gamekeeper, and had a great [illegible] have a very fine plant or two [illegible] think it will [illegible] either fruit or flower; it seems perfectly hardy as it stood our two last winters. But, certainly, I was much favoured, all my shrubs being buried in snow for eight or nine weeks last winter. I have a large plant of Benthamia fragifera in the greenhouse which is becoming a nuisance. May I venture to plant it out next spring? I should like to see it fruit as described.

If these remarks are not too tedious and troublesome to you I should like to ask for a little information about bulbs, and, at the same time, communicate their progress in this outlandish part of the country.—GROUSE.

P.S.—There is a new nut now in our fruit-shops called Sapucaia Nut, stated to come from Mexico, about an inch long, taste something between a Beech nut and an Almond nut; I should think too oily to be wholesome. Scores of my friends have been at me to know what sort of tree it grows on, and vote that I am losing my faculties because I cannot tell them all about it.

[We know little more of the Indigofera than what is noted at the page you refer to. We would advise your trying a packet of seeds from Messrs. Carter, and after a season's growth and keeping the plants in a cool greenhouse in winter, plant out some in the shrubbery next season, some against a wall, and others to be kept in a cool greenhouse. We do not think it is at all common to find country nurserymen overcharge for a new thing—in fact, the price ought to be about the same, with the extra price of carriage; and then there would be the difference of retail and trade price to make amends for the trouble—in fact, as a general rule, respectable country nurserymen supply things at the same price as the holders would do, and frequently when it is undesirable to have a number of small bills, it is best to get a new thing in this way. But for the number of bills it would, on the other hand, be desirable to get it at once from the holder; but, even then, if there be a great demand, we must be satisfied with less than getting pots so full of roots as to show themselves at the bottom! We wish all our metropolitan tradesmen the fullest success; but we cannot help wishing the same to all country nurserymen. And altogether we believe that on the whole each and every one of them are anxious to do the best for their customers, because all intelligent people are aware that honesty in such matters, as in all others, is the best policy. Time with all such, whether in town or country, is money's worth, and therefore we are glad that so many, like our correspondent, give a little order to compensate for the time of a sight and attendance. For ourselves we would visit nurseries oftener; but, because we buy or can purchase little, we do not feel it right to rob tradesmen of their time for nothing. So much is this looked at that some who grow for market never wish to see a visitor on their premises.

The Calceolaria used to be common enough; it is a fine thing —quite a mass of small flowers. Your plant ought to have bloomed in April and May, and then you should either have struck cuttings or sown seeds. We have seen it frequently since it was noticed at Raith, but not for two or three years. We think, most likely, that the digging after the suckers destroyed the plant. The greenhouse is quite warm enough for it. We should judge it was best treated as a biennial—grown one season and flowered the next.

Try Benthamia fragifera against a wall, and cover with moss at the roots, and put branches over the top in winter.

We shall be glad to give and receive the information about bulbs, when convenient.

Lecythis allaria, says Dr. Hogg in his "Vegetable Kingdom," is a tree 60 feet high, and produces the Nuts called Sapucaia Nuts, which may of late years be frequently met with in the fruiterers' shops of this country; in Brazil they are called Jaca-pucaya. The fruit is very hard, as large as a child's head, and furnished with a lid, which falls off when it is ripe, and the dry pulp and seeds also fall out; but the pot, or capsule, frequently hangs on for two years afterwards.* Each of these capsules contains a number of Nuts, which are about 1½ inch or 2 inches long, slightly curved and grooved, being in shape somewhat like a small Girkin Cucumber, but of a light brown colour. The shell is soft, and the kernel is very mild, mellow, with a sort of cream or custard flavour, and may be eaten either raw or roasted. The bark of the tree is easily separable into distinct layers by breaking it, and then the layers divide so neatly from each other that [illegible] separated, they have the appearance of satin paper

[illegible] considering them very indigestible, so [illegible] much so that if eaten uncooked they are apt to cause headache and giddiness. Roasted they are less injurious. They are imported exclusively from Para.]

CUCUMBERS INJURED BY FUMIGATING.

I AM growing some winter Cucumbers on hot-water tanks in a house with a roof. I have them back and front. I ridged them out on the 8th of November. A few days after I perceived thrips on them. I had them fumigated twice a-week with tobacco-pape for the first month, which did them no harm. The next fumigation they got, I perceived the leaves of some of the plants, which had reached highest, injured; they were as if they were scorched. I wish to be particular. The tobacco-paper was in an open pot, and the material it was ignited with was charcoal. I questioned the boy who fumigated, who said he did not let it blaze. Seeing in your Journal that brown paper was a good thing to light tobacco with, I tried it, and found it did well I was so much afraid that I went into the house, and saw it done, and kept the smoke from coming in contact with the plant that was directly over the pot by scattering it with a fan. A few days ago I had occasion to fumigate again. I happened to have some cocoa-nut fibre that I took out of some Cocoa-nuts. Not having brown paper, I tried this, and found it would not blaze. I got it ready in my pot, and put the tobacco-paper in on it. I got the boy to come in with me; he blew it, and I, as a precaution, fanned the smoke to keep it from striking too strongly the leaves overhead. The next morning I syringed with tepid water. The day became bright, and I noticed the plants to flag, and perceived two or three of the front plants many of the leaves very much injured, quite blotched, and more of the edges of them crisp, and one in particular, the furthest from where we fumigated, the most injured. I wish to mention that the back ones were not in the least touched. Could it have been that I did not syringe them enough, or that the day was bright and they wanted water? Or was it in the first instance the charcoal, and in the second, was it the cocoa-nut fiber? I wish to mention that in my house the heat at night averages from 56° to 62°, in the day 65° to 75°, as far as I have gone this season, with ventilation by a pipe that passes through the bed with three escapes, and the ridge of the roof opens when required. On the former occasion the back plants were not injured: I thought it arose from their not being so much grown as those at the front; but on this occasion they are as high as some of the parts injured on the front plants. It was all the large and older leaves that suffered; the young ones are not the least touched.—P. KIRBY.

[The roots must not touch the tank, or you will have the leaves flag whenever the sun comes out. All plants are more tender in winter than in summer, and, therefore, will stand smoking less. The younger leaves as having more vitality will suffer least. We would always use tobacco instead of paper in winter. If burned in a pot or any other vessel the top should be covered with a thick layer loosely put on of damp moss, so that the smoke shall be cool before it reaches the plants. The plants against the back wall would not be so liable to suffer as those near the glass. When the thrips were first noticed, it would be the best plan to catch them and kill them. This is not difficult to do, as they invariably congregate on the lower side of the under leaves. A lad with quick eyes would soon clear all the leaves by daubing the point of a wet finger on each jumping rascal, and thus squeezing them. You may do the same by sticking them into a damp piece of sponge. They require frequent smoking to destroy them. After smoking, the plants should be shaded from sun for several days.]

SOWING CATTLE CABBAGES.

YOU recommend sowing the seed of the Drumhead Cabbage and others, and then planting the seedlings out. To save all the trouble of watering and planting, I have always dropped the seed on the top of the balk, as I do Mangold seed, with this difference—I make my man take the seed in a teacup, and beg of him to keep his fingers dry, and endeavour to drop only three or four seeds on the surface, and then just give it a rub or a gentl scratch with the finger, and then stride on a good yard and drop in three or four more. In this way a man will stride over a large piece of ground in a day. The seed cannot be put in too shallow—just covered is enough. The probability is they will all grow, and when 5 inches or 6 inches high I single, leaving the two best plants, and after a time remove the weaker of the two, and you will have fine, strong plants with leaves feathering from 2 inches or 3 inches from the earth, instead of long-legged Cabbages tumbling all manner of ways. The plants should be 3 feet asunder every way if possible. If the land is well manured you will have immense Drumheads, without any check by transplanting. I have tried this way, and it is a good one for all winter greens. At page 38 you say the longest-kept Mangold you ever knew was twelve months. A friend of mine kept a Margold Wurtzel three years in a cellar pretty good, but shrivelled, not rotten. He examined it every Christmas-day.—W. JOHNSON, *Wattington Cottage, near Downham Market.*

HAMILTON PALACE GARDENS.

EXTENSIVE operations have been going on here within the last twelve months. New and commodious kitchen gardens have been laid out, and two very large ranges of forcing-houses have been erected by Mr. Gray, horticultural builder, Danvers Street, Chelsea. The upper range, consisting of six vineries and two Peach-houses, some 370 feet length in all, are pretty well completed; while the lower range, comprising pineries and Peach-cases, are nearly as long as the upper one, are fast approaching completion, and from the sloping character of the ground presents a *coup d'œil* of imposing magnificence. The interior of the houses shows at once their extreme commodiousness, horticulturally speaking, more of which at some future period; while the workmanship gives evidence of strength, durability and neatness, reflecting considerable credit on the unwearied exertions and skill of Mr. Mitchell, who seems anxious that the noble house of Hamilton should have a garden in the broadest sense of the term in keeping with their spacious mansion and extensive demesne.

The former gentleman who, by the way, was once a gardener, anxious to have a social evening's enjoyment among the fraternity, invited, with the permission of Mr. Mitchell, numerous gentlemen both in the "trade" and profession to inspect his labours; and the invitation, as might be supposed, extending over a considerable circle of country, was generally responded to, and all expressed much pleasure and satisfaction at what they had seen.

In the course of the evening Mr. Gray remarked, he was exceedingly glad to be honoured with the company of so many first-class gardeners. And in reviewing his past life he further remarked that he was journeyman at Coltness, then but a very obscure place; but, strange to say, he had three fellow companions. One died comparatively young in Australia, the other now lays in the churchyard of Arundel (George McEwen), and the third was a guest at that table—Mr. Shearer, Yester. He attributes his own success not so much to his own abilities, "for he never could work a rafter in his life," as to watching his opportunity—biding his time. Take cognisance of this, young men, that tact, perseverance, and probity, often make a humble aspirer a really successful man.—J. A.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Artichokes, Globe, sow in heat, and transplant into boxes, to be finally planted out in April in deeply-trenched and well-manured ground. *Artichokes, Jerusalem,* make preparations for planting them. Rich manures to be given, as they abound in nitrogen. *Capsicums,* seeds to be sown in pots, and placed in heat. *Carrots,* if a sowing has not yet been made it should now be done on a slight hotbed, and covered with hoops and mats, or a frame, which may be removed in a month or six weeks if wanted for other purposes. A little *Cauliflower* seed may be sown on the same bed. *Kidney Beans,* a crop now sown in small pots, and when of sufficient size planted into a large pit where a command of heat can be had, will produce more abundantly than those in pots. The introduction of the red spider into the forcing-house will also be avoided by adopting this plan. Keep those in pots well watered. *Mushrooms,* beds for early crops should now be made; the horse-droppings must be previously well worked to prevent their attaining a burning heat. Keep the dung well beat down at the time of making. *Peas,* when the weather will permit, draw a little earth to the early crops, which will now be on the move; and if bleak inclement weather prevails, they will be benefited by the shelter of a few fir branches stuck on the bleak side. Continue surface-stirring, and watch opportunities for the destruction of slugs, which, if not kept down, will soon commit sad ravages amongst the young crops.

FLOWER GARDEN.

During fine weather like the present regulate herbaceous plants, reduce Phloxes, &c., where they require it, and replant them after well digging the ground, taking care not to plant them too thickly. Where tree Pæonies are not growing freely, much good might be done by taking them up carefully, and digging holes from 3 feet to 3½ feet deep and from 4 feet to 5 feet wide, to be filled with a compost of well-decomposed dung, loam, and peat in equal proportions. If the bottom is wet it should be drained, as stagnant water is certain to destroy their long fleshy roots. Where choice shrubs are not growing vigorously, examine the roots, and if they are not in a healthy state, fork out and trench around the extremities of the roots, and replace with fresh soil suitable for the sort of tree or shrub. As there is no appearance of frost, Moss, Provence, and other hardy Roses may now be pruned. Cut out as much of the old wood as can be conveniently spared, and shorten back young wood to the most prominent buds. The sooner that all Roses are planted now the better, except the more tender Chinese kinds. Examine shrubberies, and cut out all dead wood from the shrubs, pruning such as require it with a knife, or mallet, or chisel, but not with a saw, unless the cut is made very smooth afterwards. Roll, sweep, and clean gravel-walks as often as practicable. Weed Box, Gentian, and other edgings in mild weather.

FRUIT GARDEN.

Planting in every part, while the weather is mild, both against walls and in open quarters, should be completed without delay. Mulch the newly-planted trees, and stake those requiring it at once. Prune and nail Apricots, and continue the same with other wall trees not yet completed. Where Filberts are brought under the influence of the knife and spade, which is by far the best method of cultivating them, let all suckers be carefully removed, and some manure forked in about the roots. Shorten all the strong shoots of last year's growth, but do not interfere with the small ones, as it is from them the nuts are principally produced. It is also advisable to thin out some of the larger branches where they are too thick.

STOVE.

Some of the plants will now begin to grow, and, consequently, must have an increase of water. Pot Cinerarias if they require it, but without disturbing the ball of earth around their roots; give them an increase of heat if it can be conveniently done. They require large supplies of water during their growing period. Pot Erythina crista-galli, previously shaking the whole of the soil from their roots, place them in bottom heat until they begin to shoot.

GREENHOUSE AND CONSERVATORY.

At every opportunity, when the external atmosphere is dry and rather warm, admit air freely to dry the plants. This will be the means of saving many a valuable leaf and branch. Shake out the old plants of Fuchsias, reduce the roots, and repot them. Introduce them to a temperature about 60°, and as soon as cuttings an inch long can be obtained strike them, and grow them as quickly as possible, to produce fine specimens before they show bloom.

PITS AND FRAMES.

Should lights become green from damp or other causes, take advantage of the weather, and have them washed, it helps to strengthen the plants at this dull season by admitting more light. Surface-dress the pots, and pick off all dead leaves. Place in heat Lobelia fulgens, splendens, and ignea, to pot off about the middle or end of February. Calceolarias which were put in last October will now be fit for potting off, and if any are not well rooted, to be placed in store-pots, and introduced to a very gentle heat. Place in heat the various sorts of Salvias, they make fine showy plants in the borders in autumn. The sooner the various sorts of cuttings are struck now the better; they should be potted off as soon as they are struck, and grown in heat during the spring, to make strong plants for turning out into the beds and borders. Dahlias of choice sorts, from which many young plants are requi[illegible] be potted and placed [illegible]

covered with leaf mould or any other light soil. Sow seed of Thunbergia, Phlox Drummondi, Rhodanthe Manglesii, Salpiglossis, and other such annuals which require to be cultivated in pots for some time before being planted out in the open borders.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WHEELED and trenched in frosty mornings, and turned over ridges previously turned up to get the benefit of the frost and air. Examined Lettuces, Cauliflowers, &c. Removed the remainder of Cauliflowers housed in autumn for winter use, and put them in a shed, the dozen or so left being scarcely worth the trouble of protecting, and Snow's Broccoli is knotting nicely in the quarter, with a little stubble beside it ready to throw over it on a frosty night. Kept mice from Peas by a thick cover of barley awns. Chopped furze is better still, when it can be got. Stirred up soil with a stick in Radish-bed. Packed up leaves round Cucumber-frame. Placed more Rhubarb and Sea-kale in the Mushroom-house; earthed up small bed that had a good portion of dry sods chopped with it, to help and dry it, the dung of all kinds being apt to be too wet at this season. Dry straw cut or chopped into inch-lengths is good for the same purpose. *Mushrooms* have been plentiful enough, but our shallow beds, individually, have seemed to bear freely for a shorter time than usual this season, which I attribute to not having so many droppings as before. In this, however, I may be wrong. I have also, to a great extent, given up surfacing the beds before earthing them with thick cowdung a little dried. There was a complaint that the Mushrooms were so thick and fleshy that there were no means of cooking them thoroughly, so as to get the centre as tender as the outsides. Gave plenty of air to Cauliflowers, &c., unless in frost. Fraser's Plain-leaved Batavian Endive is still standing well, having received only a little protection in severe weather. What is under the dry stubble and leaves is in excellent order. Blanched Turnip-tops are not so much cared for this season, as there is plenty of all green stuff as yet.

FRUIT GARDEN.

Pruned Apples, Plums, &c., what little they needed after nipping-in in summer. Pruned and nailed hardier fruit trees. Looked over Strawberries in pots. Damped Vines, &c. Syringed Peach trees in first house, especially in the middle of the day. Gave fresh soil to some old Cherry trees that were becoming exhausted from heavy, continuous bearings, and a little rich compost to Pears, Apples, Currants, and Gooseberries that were planted last year, applying it now as a top-dressing. Whenever the *birds begin to touch the buds*, will smother them with soot and lime made into a wash with soapsuds, and applied thickly with an old syringe, having just as much clay in it as to make it stick to the bushes pretty well. Sowed Melon seed in Cucumber-bed.

ORNAMENTAL DEPARTMENT IN-DOORS.

Potted Gloxinias, &c. Now is the time to assist Gardenias with moist heat, alike to encourage growth, swell the buds, and destroy the insects. All plants of a hardy character, whether shrubs, herbaceous plants, or bulbs, that have been treated to a hotbed, should be gradually hardened before being moved to the greenhouse or sitting-room, and the heat when given should be applied gradually. We have seen hardy plants brought in frosted, and placed at once in a hotbed, which is just about as wise as putting frozen Cabbages, or a frozen leg of mutton into boiling water. Most plants must be kept rather still at this season, and heat regulated according to the amount of light, and that has not been much lately. The greenhouse should be watered with care, and just enough given to prevent Camellias and other flowering things from throwing their buds. Removed a lot of Salvias, Primulas, &c., and replaced with Cinerarias, spring flowers, and Geraniums coming on, keeping the house as yet cool and airy, and thus preventing the appearance of damp, &c.

Out of doors, in pits, &c., bedding plants have had plenty of air and light after the frost went, pulling the lights off Calceolarias, &c., in fine days; and when there was any likelihood of rain, giving air back and front, but so as to keep the damp out. The Calceolarias inserted in October are with all this care getting rather thick, and I do not want to thin them out for another month if possible. The late vinery being now cleared, will have the Peach house emptied of all the common Geraniums the small plants of the variegated ones being left to grow bigger, and those from the Peach-house will cram the vinery from back to front stages, floor, and altogether; each and everything in that way, except Calceolarias, which will be all the better if they never see or feel fire heat. This sets frames, &c., at liberty for some time and for propagating, and these bedding plants will be easier kept, where a little fire heat can be given than by covering out of doors. Some of the forwardest Pelargoniums will also be moved to the same place.

Our Cannas were considerably frosted last autumn, but, standing on the floor of a house, they seem to be growing again well. They did not make such good foliage last year as they usually do; but several varieties of Ricinus Palma Christi made splendid leaves; and for a central plant or solitary specimens a correspondent lately did not say a word too much in their praise. Seeds should be sown next month (February), so as to have the plants potted off and strong before May.

In the pleasure-ground, turfing, sweeping, rolling, &c., so as to keep all nice.—R. F.

TO CORRESPONDENTS.

** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

Ve also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

Ve cannot reply privately to any communication unless under very special circumstances.

Monthly Calendar (*W. Milne*).—We try to please everybody as well as e can, but if we were to have two calendars it would take up too much om. We think, however, that a great proportion of the operations done out London in February will be done time enough in Lancashire in March. 'e think that one of the "Manuals" would suit monthly readers best. lthough we do not see our way clearly to comply with your request at esent, we will keep it in mind.

Large Geraniums in Pots (*H. B.*).—We have no personal experience of e pastils you name. We generally are a little shy of most new things til we have tried them by degrees. See what is said to P. Kirby about oking. See answer to correspondent last week as to Mr. Fish's large eraniums. The pots are some 14 inches. The object is to get from them a eat mass of bloom all the summer, and hence they are merely kept alive in inter. In your case, to get a good show in winter you could not do better an the plan you adopt. As a general rule, the large and horseshoe kinds swer best for that purpose. Mr. Fish's plants are Tom Thumbs. But for e room in winter he would have more of them.

Layering Apple Trees (*C. H. W.*).—We have no great notion of layering ch trees, though a few kinds may do well. For ourselves, if ringing at all would take off a ring of bark 1 inch wide as soon as the flow of the sap uid enable us to do so, and tie a piece of calico or paper over the part. soon as the leaves began to expand we would lay the part in a pot of soil, d remove it as soon as it was supplied with roots. Where this plan would t suit, or be apt to make the shoot to crack, we would merely remove the rk on one side and twist the shoot, or perhaps slit it up the middle, and ice a pebble or a bit of wood between the slits to prevent them coming gether again. You will no doubt thus obtain very dwarf trees.

Peach Trees Shedding their Blossom-buds (*R. J. W.*).—There is thing so likely to cause this as the trees being allowed to become too dry in autumn, and then to have had a free watering at once. If that watering ceeded it should be given by degrees by making holes in the soil.

Cyclamen vernum (*Halesleigh*).—Your Cyclamen is the true vernum at t, having the leaves of persicum very nearly and the flowers of coum, but ich larger and much lighter. But have your "roots," the family crest t mentioned by Sweet in his "British Flower Garden," vol. i., plate 9, is—"The leaves and flowers are produced on a kind of short flat stem that nches from the tuber, not directly from the crown of the tuber, as in sicum and coum." Our individual tuber of vernum has this family crest, t the crest went blind before we had it. After that another "short flat m" has been made from the middle of the side of the old tuber, and that ow in seed—two pods, but yet very small ones. Mr. Beaton would be rticularly obliged for a tuber from you, and one pod of its seeds if it sets h you. He thinks the family crest of vernum may have been the result extreme old age in the bulb from which Sweet drew his description. t bulb was under Sweet's own management at Colville's nursery, and omed at the beginning of March, 1821; but Sweet put all his bulbs and ers up on dry shelves in their balls, and mostly out of pots while at rest: refore his vernum flowering three months later than it did in Miller's e, or in Gordon's practice, or in our own experience, is not to be wondered The new race of Cyclamens obtained by Mr. Atkins between coum and sicum have now sported into a large family of many shades and tints, some are as like vernum as can be, except the family mark of producing res and flowers on a short blunt spur above the tuber.

rchids (*W. H. M.*).—Any of the first-rate nurserymen who advertise in columns can supply you. We cannot recommend any one.

Hexagon Garden Netting (*J. C. C.*).—Mr. Haythorn lives at Nottingham. His advertisement is in our Journal to-day.

Cutting Down Sickly Hollies (*W. X. W.*).—The best time for the operation is at the very end of April. Cut them down level with the surface, or even rather below it.

Greenhouse Annuals to Flower in April (*T. Crews*).—Collinsia bicolor and others; Nemophila insignis and others; Mignonette if sown in heat; Virginian Stock, white and pink; Musk taken up, and potted, and placed in heat. Treat all the others in pots in the temper ture of the greenhouse. There are many other annuals that will come in later, but these will bloom by that time with ordinary attention.

Lapageria rosea and Desfontainia spinosa (*Sunderland*).—See answer to "Clericus" Drain the pot extra well, and plant in fibry loam and heath soil in equal proportions, with about a fourth part of fine leaf mould and the same of sand (silver), and bits of charcoal. Use rather a large shift, and water carefully, and protect the pot from extra bright sun whilst the top is exposed. Similar soil without the leaf mould for Desfontainia, and rest for a time when the growth is made, and increase the temperature as the plant commences to grow afresh.

Luculia gratissima and Lapageria rosea in Pots (*Clericus*).—The Luculia and the Lapageria can be grown very well in pots, and in the mode you propose. Fibry loam and heath soil, with good leaf mould and a fair proportion of sand suit them well. The reason why a border when suitable is recommended is that the roots do not like sudden changes or frequent mutilations: hence, when grown in pots the shifts should be rather large for the plants, and water given with care so as not to soak the earth before the roots get into it. And then in summer and autumn, the roots, if close to the outside of the pot, should be protected from great heats by the pot being partly plunged, or a piece of mat or cloth put round it, or sunk partly or wholly into another pot, with moss at the top to keep a hollow space between them.

Plants under an Arbor Vitæ Hedge (*A Bath Subscriber*).—Of all things you can put in the border under the Arbor Vitæ hedge, grass turf will do the least harm to the Arbor Vitæs; for they of all other fence plants suffer least from having turf over the roots instead of a bare surface border full of all manner of mixed things, or of one thing, as Rhododendrons, which never yet agreed in the same border close to Arbor Vitæs. Hedges of Arbor Vitæs are most beautiful fences where they are done justice to, as we advise for yours; but they are most unsightly things if they are not treated properly, which they never are when they get only one share of the goodness of their own border. But seeing you will have your own way, pray confine the whole length of the border on both sides of the hedge to spring-flowering bulbs, and you will never repent it.

Name of Fruit (*G. P.*).—Your Apple is the Norfolk Beefing. The spots upon it are fungoid attacks, occasioned either by the season, or from the roots having got into bad soil. The latter appears to be the cause, as the Pears you sent are evidently suffering from the same affection. How is your drainage? If that is not good, on such stiff clay as yours is the fruit would present that appearance.

Names of Plants (*H. M. J.*).—1, Pteris hastata; 2, Polystichum aculeatum; and 3, the variety lobatum; 4, Lastræa dilatata apparently—but you have sent the wrong "half of the frond," the lower part with the scales of the stipes being necessary to certainty in naming; 5, Asplenium adiantum nigrum; 6, Lastræa dilatata collina, not fully developed. (*J. P.*).—The flowers you enclose are of Chimonanthus fragrans.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

February 5th and 6th. Liverpool. *Sec.*, J. T. Lawrence, 3, Cook Street. Entries close Jan. 21st.
February 7th and 8th. Nantwich. *Sec.*, E. H. Rhodes. Entries close Jan. 25th.
March 1st. Halifax. *Sec.*, Mr. J. W. Thompson, Southowram, near Halifax. Entries close February 20th.
May 14th and 15th. Taunton and Somerset. *Sec.*, Charles Ballance, Esq., Taunton.
May 27th, 28th and 29th. Bath and West of England (City of Wells.) *Steward*, S. Pitman, Esq., Manor House, Taunton. Entries close May 1.
June 4th and 5th. Beverley and East Riding. *Sec.*, Mr. Harry Adams.

CHRISTMAS POULTRY MARKET.

(*Continued from page* 364.)

It is said that circumstances bring men out, and with many the purchase of the Christmas poultry is no light matter. They come by shoals during this week, and spend hundreds of pounds. They are self-sufficient men, and coming at a time when their spirits are buoyant, they form an amusing study. They never come alone, one or two friends accompany them. The retail shops in a wholesale market are beneath their notice; and when a friend expresses a faint doubt of their judgment, or remarks on the absence of any right to complain if they are taken in or imposed upon, they only affirm that such a thing is impossible. Then they enlarge on the iniquities of retailers, and the advantage there would be if it were possible for consumers to buy everything wholesale. They are careful to ask the price of such things as they purpose buying on the road to the market. We will go with such a one and his friend for ten minutes, and buy the Christmas poultry. "Our people," as he condescends to term his employers, give beef to all who work for them, and he has settled to have boiled fowls. His wife informed him when he returned from business, that for two such as *he* would like they had asked eleven shillings. His indignation was boundless, and he'd be kicked if he wouldn't soon turn tory, and wink at all sorts of abuses—a tariff for instance, of all eatables, so that a woman might go to market without fear of being imposed upon. Eleven shillings! it was too bad, by Jove it was. "Well, but," says his wife, halting in the operation of stirring the pudding, "what is to be done? Are we to go without?" "Without! No." Being Christmas-eve he has left office early, he will call for a friend, and they will go to Leadenhall.

This eve is unlike all other eves, and such a one who never exceeds his pint of half-and-half per diem, who thinks wine and the Insolvent Debtor's Court twins, on this occasion such a one will accept or give a glass of sherry without even a twinge. Our friends have had several glasses, and, of course, each has a cigar in his mouth.

The buyer carries a blue bag in his hand. After he has turned out of Gracechurch Street, and is going to the market, there is time if he should alter his mind. Retail shops are on each side of him. He feels playful, he asks the price of fowls at every shop—none of your shabby little things, but a pair of good big Surrey fowls. Everwhere eleven shillings. He would be angry, but it is Christmas, and he cannot. He turns into the market. At the first shop on the right, large fowls are heaped on the lid of a hamper. He asks the price of two of them, they are very large and so fat. "Seven shillings per couple." His elbow visits the ribs of his friend. "There, what did I tell you?"

Children like puppies and kittens better than grown animals, because they can patronise and govern them; and if a man of the class of the buyer with whom we are now associating takes a friend to witness the display of his acumen and *savoir-vivre* he will cautiously avoid even an equal—he must be an inferior, and he would bring a dependant if he had one. Friend has his doubts about quality: he dares not whisper them, and therefore, like greater men on greater occasions, he says, "Ah!" Buyer is not content, he will try elsewhere; and it is not till he has been round the Market, and has been told in answer to the inquiry about the price of two good fowls that he may go to Bath—worse still, to hang himself, or he is invited to come next week, or reminded that there is a pump in the court, that he makes up his mind to return to the first stall. (*Mem.*—A salesman does not keep *a shop.*) He has not been a hero in the eyes of his friend, and finds he has to make up lost ground. He therefore returns, and says he will have two of those fowls, and desires the salesman to pick him two of the best. He gets no answer, and the salesman walks away. *This* is not making progress. He tells his friend he did not hear him, and follows up till he is informed if he does not have them at once he shall not have them at all. He goes to select two, and is told not to pull them about, but to take them as they come; and at last he does so. He has not risen in his friend's estimation. The latter ventures to doubt the quality of the fowls; and this ends in buyer's doing that which he never intended—asking his friend to dine with him. He did not intend it, but it should be seen whether he was not a judge of poultry. What a storm! Luckily "our people" gave some beef, or the party would have been dinnerless. Buyer had misgivings when the cover was removed. Instead of looking round, plump, and white, and of being well seated in the dish, they were angular at top and round at bottom. They would not lie still in the dish—they rolled about; their breasts were every shape but the right; the stumps of their legs protruded through the skin; and, spite of all the efforts of white sauce, the fowls were decidedly yellow. Their appearance gives him a shudder, and, like a skilful general, he looks to his rear to secure a retreat. He mutters something about badly trussed and boiled at a gallop. It was well he did—they were uneatable. He lost ten minutes and his temper trying to cut one up, and then furiously ordered both to be put in his bag and he would take them back.

Boxing-day is a *dies non* in many businesses; and at Leadenhall Market, although every one is obliged to attend, it amounts to little. Salesmen and men are lounging about. Between eleven and twelve buyer, who is rather seedy and ill-tempered, goes into the Market. His temper is not improved as he walks up the passage. No solicitations to buy, but a great amount of "chaff" as to the contents of the bag. He is determined to [illegible] it, and seeing a curious bird suspended at a shop where our [illegible] men were helping each other to do nothing, he [illegible] what they call it. A man touches his hat and [illegible] they want it." This does not improve his temper. As he goes to the stall he is foaming. "Now, sir," says he, fumbling in his bag, "did you sell me two fowls Christmas-eve?" "Don't know," says the salesman. "Yes you do," shouts buyer, "and they were old ones. Look here!" and he produces one from the bag. "Well," says the salesman, "I think you are right—it is an old one." And just as buyer is about to talk about the "press," "imposition," and so on, he is told to be off and to take his rubbish with him, and finds himself the laughing-stock of every one.

ULVERSTON EXHIBITION OF POULTRY.

The annual Show at Ulverston is just concluded; and, although the number of pens exhibited this year is scarcely equal to those of former meetings, the general superiority of the birds competing was the subject of universal congratulation: the fact being, there was scarcely an indifferent pen to be found in the whole collection.

This Show possesses the great advantage of having a Committee of Management, all seeming to have one common interest in its welfare and perpetuity, every member proving himself ready and willing to put his shoulder to the wheel whenever necessity requires it. Here is an example that might be followed by not a few committees of similar exhibitions that we meet with year after year, to their several improvement and stability. A somewhat general failing in such committees is this—that although at the onset the proposition to institute a local poultry show is met by universal sanction and approval, yet, when the work ever consequent on carrying out such a meeting in a successful and orderly manner hangs heavily, the greater proportion prove themselves either actual deserters altogether, or hang about listlessly, causing even increased difficulties to the few who only desire to act with promptitude and efficiency. Not so at Ulverston. Every one of the Committee was at his post, all evidently anxious by his own personal efforts to insure the perfect success of the undertaking.

The Victoria Concert Room is another great advantage to this Society, being at once a spacious, well-lighted, and perfectly-ventilated exhibition-room. This year's Meeting, too, reaped an unlooked-for advantage; for last week a ball was held, and the whole building had been on that occasion most tastefully and profusely decorated with artificial flowers and evergreens, which, still remaining, added very materially to the general appearance of the Poultry Show without increasing either labour or expense to the Committee; the whole appearance of the Show was, therefore, singularly effective.

To say that the fowls were efficiently managed is only a recapitulation of our statements respecting former Shows at Ulverston. The Committee, being most of them poultry exhibitors, left nothing undone that could be done to insure the safety and well-being of every pen confided to their care; nor do we doubt that many birds will reach their respective owners in even improved condition to that in which they were forwarded.

In *Spanish*, Mr. Teebay, of Preston, took both the premiums, closely pressed, however, for the second position by the Hon. Secretary, Mr. Robinson, who exhibited a pen of birds of unusually good quality. It is really surprising how much the cock bird in Mr. Teebay's first-prize pen now assimilates to its parent, that for some years past was the most coveted of any among Spanish amateurs. The four hens exhibited from this yard too were four of the best-conditioned hens we ever remember to have seen together.

In *Dorkings*, the class generally was superior to common; but the first-prize Silver Greys were unusually perfect and well shown.

In class 3, for *Game*, Black-breasted or other Reds, the competition was most extraordinary, as the fact that only a single pen in the class remained unnoticed in the prize list will elicit. Mr. Robinson here exhibited the same cock as was shown at Whitehaven some fortnight back, and of which we then spoke so favourably, but with hens of infinitely better selection; they therefore now took precedence in a competition that rendered success even an increased difficulty. The Duckwings were good, particularly Mr. Hindson's first-prize pen, which were as perfect in condition as in plumage. In the second-prize pen we at once recognised an old acquaintance, although now the property of [illegible] owner; he is still as he always was, one of the best bird in hand of Duckwings we ever met with, but is fast declining in the colour of his plumage; from this cause his triumphs as an exhibition bird are on the wane. The Black Game shown deserve our highest approval; but the Whites and Piles were not above mediocrity.

The *Cochin-China* class was really excellent, more particularly the Partridge-coloured variety.

All the four classes of *Hamburghs*, although very good, betrayed an almost general fault, to which we have repeatedly alluded as ever fatal to success—viz., imperfect combs. We again say too much attention cannot be given to this point in selecting birds either for nesting or exhibition purposes.

The *Polands* only mustered three pens; but still all were capital. Black, Silver-spangled, and Golden-spangled were the varieties shown.

In the "Extra Class," Brahmas, Malays, and Black Hamburghs were especially good; the fact is, there could scarcely be better ones.

The Sebright *Bantams* were shown in first-rate condition, the competition being good throughout. The Game Bantams were undoubtedly one of the best varieties of poultry shown, whether as pens of three or single cocks. From some cause or other, however, not a few of the best birds were exhibited in very far inferior condition to ordinary.

In Aylesbury *Ducks* Mrs. Seamons took the lead; but more closely pressed than we ever yet remember by the second prize birds, belonging to Mr. Robinson, of Ulverston. A most unprecedented feature, and at the same time a most satisfactory one, occurred in the Rouen Duck class; throughout the whole rather extensive class only a single pen was faulty, either in bills or feather, consequently the scales were called upon as the surest telltale. Here again they proved closely competing, the best pen weighing 25¾ lbs., and even the lightest weight among the whole was 22¼ lbs. fully. In Buenos Ayrean Ducks, Mr. Sainsbury, of Devizes, secured first position with a most excellent pen, in defiance of a very spirited competition among six pens (out of a class of eight), all standing well-named in the prize list. We must surely have been wrongly informed that this gentleman had determined to sell out, and abandon the fancy, for this cannot possibly be while in possession of such specimens as those shown at Ulverston. A beautiful pen of Mandarin Ducks, and a perfect trio of Call Ducks, were attractions in the extra Duck class.

We now come to a most important feature in the Show—the class for *Single Game Cocks*, the prizes being very liberal the competition was necessarily most cutting and severe. Thirteen birds are favourably mentioned in the prize sheet. As might be expected, condition here told a heavy tale, either pro or con, as the birds forming the whole class (save one) were tested by the hand. It is right here to name that a very capital bird (pen 168), wilfully trimmed the night previously in the hackle, was at once disqualified, and this silly act of its owner prevented its competition, whilst otherwise it might have stood well placed. The excuse made by the proprietor, we confess a flimsy one, "he never thought the Judge would have detected it, or he would not have attempted the deception." The first-prize bird was a marvellously good Black-breasted Red, taking a £7 prize; the second, a peculiarly neat-looking bird for his enormous size (said to be 7¾ lbs.), a Brown Red; the third, also, was the same colour; and the fourth, a Black-breasted one. Many of these birds only reaching a high commendation, had stood in far higher position at former shows; but now their condition was vastly deteriorated. As a class we rarely see better.

The following is the list of awards:—

SPANISH (Black).—First and Second, R. Teebay, Fulwood, Preston. Highly Commended, G. Robinson, Highgate, Kendal.

DORKINGS (any colour).—First, J. Rowlandson, Hawkshead, Lancashire. Second, J. Robinson, Vale House, Garstang. Highly Commended, T. W. Hill, Manchester. Commended, W. W. Ruttlidge, Kendal; R. Sergenson, Prescot.

GAME (Black-breasted and other Reds).—First, R. I. Robinson, the Nook, Ulverston. Second, G. C. Whitwell, Kendal. Highly Commended, N. Grimshaw, Burnley; E. Swainson, Newton-in-Cartmel; R. I. Robinson; J. Boulton, Ulverston.

GAME (Duckwings and other Greys and Blues).—First, J. Hindson, Everton, Liverpool. Second, J. B. Chune, Coalbrookdale, Shropshire. Highly Commended, R. I. Robinson, the Nook, Ulverston; W. Dawson, Birmingham; W. Brocklebank, Ulverston. Commended, W. Brocklebank.

GAME (Whites and Piles).—First, R. Gelderd, Ulverston. Second, J. Martin, Newton-in-Cartmel. Highly Commended, E. Swainson, Newton-in-Cartmel.

GAME (any other variety).—First, W. Dawson, Birmingham. Second, M. J. Cranke, Urswick. Commended, G. C. Whitwell, Kendal; W. Charter, Driffield.

COCHIN-CHINA (any colour).—First, J. W. Walthew, Ormskirk (Partridge). Second, W. Wood, Walkley, Sheffield (Buff Cochins). Commended, J. W. Walthew (Silver Cinnamon); E. Smith, Manchester.

HAMBURGH (Golden-pencilled).—First, A. Nuttall, Manchester. Second, F. Hardy, Laister Dyke, Bradford. Highly Commended, J. Munn, Stacksteads, Manchester; Carter & Valiant, Poulton-le-Fylde; F. Hardy; J. B. Chune, Coalbrookdale, Shropshire; R. I. Robinson, the Nook, Ulverston.

HAMBURGH (Silver-pencilled).—First, J. Martin, Newton-in-Cartmel. Second, J. B. Chune, Coalbrookdale, Shropshire. Highly Commended, J. Dixon, North Park, Bradford.

HAMBURGH (Golden-spangled).—First, J. Dixon, North Park, Bradford. Second, J. B. Chune, Coalbrookdale, Shropshire. Highly Commended, W. R. Lane, Birmingham. Commended, J. Cragg, Kendal.

HAMBURGH (Silver-spangled).—First, J. Dixon, North Park, Bradford. Second, D. Wilson, Crosshills, Yorkshire. Highly Commended, R. Baird, Kendal; R. Teebay, Fulwood, Preston; J. B. Chune, Shropshire; G. R. Tate, Driffield. Commended, J. Phillipson, Coniston.

POLAND (any colour). — First, J. Dixon, North Park, Bradford (Silver-Spangled). Second, H. Johnson, West Sunderland (Black). Highly Commended, J. Dixon (Gold-spangled).

ANY OTHER DISTINCT OR CROSS BREED.—First, R. Teebay, Fulwood, Preston (Brahma Pootra). Second, J. Dixon, North Park, Bradford. Highly Commended, J. Nelson, Dalton-in-Furness (Brahma Pootra); E. Hutton, Pudsey, Leeds (Black Hamburghs); T. W. Hill, Heywood, Manchester (Brahma Pootra); G. R. Tate, Driffield (Malays).

BANTAMS (Gold and Silver-laced).—First, T. H. D. Bayley, Biggleswade, Beds. Second, E. Yeardley, Sheffield. Highly Commended, I. G. Park, Gillhead, near Whitehaven; T. W. Hill, Heywood, Manchester.

BANTAMS (Game).—First, G. C. Whitwell, Kendal. Second, R. Moon, jun., Wavertree, Liverpool. Highly Commended, J. Cragg, Kendal; T. H. D. Bayley, Biggleswade, Beds; J. Camm, Southwell, Notts; W. Silvester, Sheffield (Duckwings); R. I. Robinson, the Nook, Ulverston; E. Holdsworth, Calls, Leeds; G. R. Tate, Driffield; G. C. Whitwell; J. R. Rodbard, Wrington, Bristol. Commended, E. Yeardley, Sheffield (Duckwings); I. G. Park, Gillhead, near Whitehaven.

BANTAMS (any other variety).—First, Miss D. A. King, Whitehaven (Japanese). Second, E. Hutton, Pudsey, Leeds (White). Highly Commended, T. H. D. Bayley, Biggleswade, Beds (White); T. W. Hill, Heywood, Manchester; E. Hutton (Black).

DUCKS (White Aylesbury).—First, Mrs. M. Seamons, Hartwell, Aylesbury. Second, R. I. Robinson, the Nook, Ulverston. Highly Commended, T. W. Hill, Heywood, Manchester; Mrs. M. Seamons.

DUCKS (Rouen).—First and Second, R. I. Robinson, the Nook, Ulverston. Highly Commended, W. Mitchell, Cabbage Mills, Keighley; J. Dixon, North Park, Bradford; G. R. Tate, Driffield; R. I. Robinson; G. C. Whitwell, Kendal. Commended, R. I. Robinson.

DUCKS (Black East Indian).—First, G. S. Sainsbury, Rowde, Devizes. Second, J. Dixon, North Park, Bradford. Highly Commended, J. R. Jessop, Hull; F. W. Earle, Edenhurst, Prescot; H. Child, jun., Birmingham; J. Martin, Newton-in-Cartmel.

DUCKS (any other variety).—First, J. Dixon, North Park, Bradford (Mandarin). Second, T. H. D. Bayley, Biggleswade, Beds. Commended, W. Charter, Driffield.

EXTRA PRIZES.

GAME COCKS.—First, J. S. Butler, Poulton-le-Fylde. Second, H. Parker, Wellington, Salop. Third, A. G. Brooke, St. Bees, Whitehaven. Fourth, J. Hindson, Everton, Liverpool. Highly Commended, E. Archer, Malvern; N. Grimshaw, Burnley; C. B. Kennedy, Ulverston; A. B. Dyas, Salop. Commended, E. Archer; J. B. Chune, Shropshire; J. Boulton, Ulverston; R. I. Robinson, the Nook, Ulverston.

GAME CHICKENS (any variety).—First, G. C. Whitwell, Kendal. Second, E. Archer, Malvern. Third, A. Hampson, Bolton-le-Moors. Highly Commended, T. W. Redhead. Commended, R. Parkinson, Poulton-le-Fylde; R. I. Robinson, the Nook, Ulverston; A. B. Dyas, Salop.

GAME BANTAM COCKS.—First, R. Moon, jun., Wavertree, Liverpool. Second, T. H. D. Bayley, Biggleswade, Beds. Highly Commended, R. I. Robinson, the Nook, Ulverston; R. Moon, jun.; J. Camm, Southwell, Notts. Commended, J. Cragg, Kendal; J. Shorthose, Newcastle-on-Tyne.

Edward Hewitt, Esq., of Eden Cottage, Sparkbrook, officiated as Judge, and the Meeting was very well attended.

THE CAYUGA BLACK DUCK.

THE variety of Duck to which this name has been applied is remarkable for the great weight it attains, and the fine quality of its flesh. Its origin is not positively known. We first saw it fourteen or fifteen years ago in Cayuga county, New York, where it has been bred in considerable numbers. In general appearance, except in being of larger size, it closely resembles the Ceylon or East India Duck which we have seen in Europe. It is larger on the average than the Aylesbury, and nearly or quite as large as the Rouen. J. R. Page, of Sennett, Cayuga county, New York, who has bred these Ducks many years, states that he has had them to weigh 16 lbs. per pair at six months old. About the 1st of December Mr. Page killed some, the weights of which were as follows:—Young drakes 8 lbs. each, dressed; a young Duck 7 lbs.; five yearling Ducks from 7 lbs. to 7½ lbs. each. Mr. Page observes that there is usually more or less white on the breast of these Ducks, but he thinks they could be bred perfectly black. They are unquestionably a very valuable variety. The quality of their flesh we know is excellent.—(*Boston Cultivator.*)

EARLY POLLEN-GATHERING.—I have this day (January 27th), seen the bees of several of my Ligurian stocks bringing in pollen pretty freely. It is a rather singular coincidence that it was on the same day of the month last year, that I first observed pollen-gathering in my apiary.—A Devonshire Bee-keeper.

CANARIES AT THE CRYSTAL PALACE SHOW.

The Exhibition of all kinds of birds showed a great advance on previous years both in number and quality, showing what can be done by careful breeding. The Norwich classes were very superior. In the Jonque class the colours resembled that of an orange, and their shape was good. In the Mealy class they were all that could be desired—in fact, the best ever as yet presented for competition. In the Belgian classes vast improvement was very discernible, and scarcely a bad bird among them. So different from former years, breeders having turned their attention to the true breed, and have discarded the long coarse-feathered bird so prevalent in former times. The Crested birds are still behind in shape, &c. The Lizards were very good, but especial attention should be paid to obtain the clear cap, which in some was broken. The classes of "London Jonque Fancies" were especially good, and deserve the highest commendation; and the difference in the shades of colour could only be discovered by taking them out of the cage and bringing them in close contact. The feathers were of a most brilliant gold colour, and the green almost black. The Mealy were also good. In the "Goldfinch Mule" class too much cannot be said in their favour, they were of themselves a show. There were two hybrids between the Goldfinch and Bullfinch, perfectly beautiful, showing the two distinct breeds, and most rare.

The Foreign birds were in endless variety and good condition. The Parrots and Parroquets were well represented.

There were also British songsters in first-rate appearance, being very clean and looking as if well cared for. A novelty appeared in the Bullfinch class of two Pied, black and white.

In the Magpie class there were two of dun colour in the place of black, and, strange to say, were found in the same nest with others of the usual colour.

The Show, in fact, was all that could be desired, and no amount of praise is too great for Mr. Houghton, under whose direction the whole arrangements are made.—T. Moore.

TEMPERATURE OF BEE-HIVES IN WINTER—VENTILATION—LIGURIAN QUEENS.

I have to thank Mr. Taylor for his decisive confirmation in your last Number of my views respecting the effect produced by ventilation in lowering the temperature of the interior of bee-hives during winter. I find on examining his table recording the temperature of ventilated hives, that the highest point reached during the month of January was 64° by hive No. 1; whilst in hives Nos. 2 and 3, which appear to be the only others in which thermometrical observations were registered during that month, the highest temperature was 50° and 60° respectively. The results of these observations vary so greatly from those recorded by Huber, that the mere difference in climate between Switzerland and England cannot be held sufficient to account for it. We must therefore, it appears to me, come to the conclusion that the real cause of this remarkable variation is to be found in the fact of Mr. Taylor's hives being well ventilated, whilst those of his illustrious predecessor had not the benefit of this comparatively modern practice in bee-keeping.

With the view of testing whether the above-mentioned is or is not the real cause of the discrepancy alluded to, I this morning (January 29th), between nine and ten o'clock, ascertained the temperature of the central part of the interior of four of my hives by the introduction of a small thermometer which I allowed to remain until all excitement had subsided. The following are the results:—

Hive No. 7	80°	Hive No. 16	86°
" 9	86°	" 22	89°

Hive No. 7 is the least populous of the four colonies experimented on; but I should state that brood is present in all. This experiment appears to confirm the accuracy of Huber's observations, and tends to prove the correctness of the views propounded by me in page 347—viz., that ventilating wooden hives during winter prevents the deposit of internal moisture by lowering the temperature of their interior; whether this diminish[illegible] breeding, be itself nearly if not quite as great an evil as that which it is designed to remove may be deemed an open question, and one which experience alone can solve. If wooden hives could be rendered equal as nonconductors of heat to those made of straw (in which ventilation is generally unknown), the deposits of internal moisture might probably be either altogether avoided, or at any rate greatly diminished. It is with this view that I have tried lining a couple of my hives with rush matting; but this experiment is, as yet, too recent to warrant me in pronouncing an opinion upon it. So far as my present experience and observation extend, I fancy it will be found most advisable to ventilate wooden hives during the first part of winter—say until the month of January commences.

The following extract from a letter written from Staffordshire, dated the 22nd January, in which the subject is adverted to may not be without interest:—

"I have this season been trying the system of perfect ventilation since the beginning of November—*i.e.*, the bungs have been taken out from the tops of the boxes, and the apertures covered with perforated zinc. A friend of mine, mentioned by W. Johnson in The Journal of Horticulture, treated his bees in this way with the greatest success, and had the earliest swarms in the neighbourhood, and the consumption of food was very much lessened. I am quite persuaded that no amount of cold experienced in this climate will injure bees thus exposed. I closed the aperture at the top of my Ligurians about a fortnight ago, as I thought the warm weather would induce the queen to lay.

"My two boxes of common bees are still quite open; and all my bees are very healthy. Although the Ligurians and swarm of black bees may be said to have subsisted entirely on loaf sugar and water since August, I see no symptom of dysentery which attacked them last year when fed on brown sugar and beer.

"I find the Ligurians much more alert and watchful than the black bees, especially at low temperatures. Are any of your original queens still alive?—B."

In answer to the concluding query, I may state that only one of my original Ligurian queens now survives. Two fell victims last summer to the attempt to lead off natural swarms—a task which the state of their wings quite unfitted them for accomplishing. One dropped close to her hive, and, being returned by me, was cast out dead next morning, having been slain by a young queen which had made her appearance from a royal cell that I had overlooked. The other probably fell at a greater distance among the grass, as I could not succeed in discovering her. The swarm in each case returned to the hive whence it had issued. This (as it turned out) fatal mutilation of the wings was caused by the pulling about which the unfortunate queens received from the black bees during the time they held them in durance, on their being first introduced, and before they were allowed to exercise their royal functions. It adds yet another element of uncertainty in addition to the very great risk which attends the introduction of Ligurian queens to stocks of common bees.—A Devonshire Bee-keeper.

VARIETIES.

Butter Free from Turnip Taste.—For fifteen years I have practised the following plan; and not only have had butter without having the least taste of turnips, but superior in taste and colour to grass butter. Imprimis—The cows should not be fed with turnips an hour previous to either morning or evening milking; next, the milk should always be collected in crocks or other glazed earthenware material, and not in wood; these crocks, before and after being used, should be washed clean with scalding water and thoroughly dried. Previous to putting in the milk or cream, about half a pint of sweet buttermilk and about the size of a large pea of saltpetre should be first put in the crock; then let the warm milk be strained as usual down on it. The quantity of buttermilk above mentioned is sufficient for thirty quarts of new milk. I always keep my milk from six to eight days before churning, and it is then both thick and sour. By following these rules, I am sure that any of your subscribers who try them will find their beneficial effects.—An Old Subscriber's Wife.—(*Irish Farmer's Gazette.*)

OUR LETTER BOX.

Rabbits (*Y. H.*).—How can we tell the average weight unless you specify the variety? Some varieties are pigmies and others giants. We [illegible]

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	FEBRUARY 11—17, 1862.	Weather near London in 1861. Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
11	Tu	Brachysema latifolia.	29.959—29.728	40—20	N.E.	—	24 af 7	5 af 5	23 5	12	14 31	42
12	W	Brachysema villosa.	29.[illegible]43—29.530	39—24	W.	—	22 7	7 5	56 5	13	14 31	43
13	Th	Boronia pinnata.	29.938—29.556	41—20	N.	.07	21 7	9 5	21 6	14	14 29	44
14	F	Cytisus filipes.	29.059—29.762	45—38	E.	·12	19 7	10 5	rises	O	14 27	45
15	S	Epacris impressa.	29.465—29.449	54—40	S.	·01	17 7	12 5	44 a 6	16	14 24	46
16	Sun	Septuagesima Sunday.	29.711—29.571	55—35	S.W.	·04	15 7	14 5	5 8	17	14 21	47
17	M	Erica transparens.	29.788—29.546	57—35	S.	—	13 7	16 5	26 9	18	14 16	48

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 45.3° and 30.5° respectively. The greatest heat, 65°, occurred on the 11th in 1831; and the lowest cold, 0°, on the 13th in 1855. During the period 151 days were fine, and on 87 rain fell.

CYCLAMENS.

OSTS of fresh specimens of the different kinds of Cyclamens (of some the leaves only, and of others leaves and flowers), from all parts of the country, and from plants bought in London and in provincial nurseries, have been sent to me, all of which I intend drying and preserving for future reference; but the questions and the references which are required of me regarding them would fill a book of many pages, and what to do about them is easy enough; but it is more easy to see how very different the thing when done shall be taken by different growers, for it seems a universal point with the collectors of very old and very rare plants to have adopted the errors of the race of botanists who made the mistake, and maintained it for the last three score and ten years, about the Ivy-leaved Cyclamen. But I rather suspect the mistake has been of older date still, and that it originated with Linnæus himself in his "Species Plantarum;" for Miller, who took all the botanical definitions of Linnæus as far as they went, for the unreformed early editions of his dictionary, quotes Linnæus' "Species Plantarum, 184," in his description of the "Ivy-leaf Cyclamen" (foliis hastato-cordatis angulatis) and says it grows in Austria, Italy, and other parts of Europe, so will thrive in the open air in England, and is never hurt by the frost; also, that its flowers appear before the leaves, "rising immediately from the root," in August and September, and soon after the leaves come out and continue growing all the winter and spring, till May, when they begin to decay.

I have two fresh leaves of this very plant in water before me from a clergyman in the west of England, who has one of the best-named collections of rare plants, perhaps, in the kingdom. One leaf is that of the white Ivy-leaved kind, the other that of the red-flowering one, and the reverend gentleman says "these two flower in the autumn, the flowers come before the leaves, and the plants are beautiful objects all through the winter; mine are old plants and very large. I have four in a large bed, one at each corner. I send you a few seedlings of each," for which I am very much obliged. I want a few of last year's seedlings, and a few seeds of that or any season for the last ten years, of all the kinds of Cyclamens in cultivation; and I also want a plant of all the kinds, not including the Atkinsii race, from as many growers, and as widely apart as may be found, purely for the purpose of identity, and solely for the benefit of eager correspondents, who desire their collections to be properly named, free from doubt, if that is possible.

I have a large collection of gay Cyclamens, and I want no sort of persicum, no coum, and none between the two—that is, as is just stated, none of the Atkinsii race, a race the most lovely of them all; but I am full of them, and none of them are wanted for what is desired of me. Now, this Ivy-leaved of this English amateur, of Miller's dictionary, and the foliis hastato-cordatis angulatis of the "Species Plantarum" of Linnæus, is not, and cannot be, the true Ivy-leaved Cyclamen at all; and I must beg pardon of the representatives of Sir E. J. Smith and Don, and of Dr. Lindley, for saying they made the mistake about this plant, as I thought they did, but since then, from a prick of the conscience, I traced the mistake back to Linnæus, and they only followed the trump card.

Clusius, an old French writer, had named a south-of-Italy plant, and called it the Ivy-leaved Cyclamen long before Linnæus was born, and that plant is much more tender in constitution than persicum, and has never yet been found in Austria at all, nor in Italy on the north side of the Po, nor much north of Naples. It is confined to the south peninsula, and there, as in cultivation, never fails to bloom in the spring, and never in the autumn: therefore, Linnæus was mistaken about the Ivy-leaved Cyclamen, which was followed by all our British botanists, and had to be rectified. A most amiable old Italian botanist, Tenore by name, and lately deceased, undertook that task, and did it well too; and it is as well that British amateurs, too, should revise the names in their collections. As to the botanists, they put their numbers and names in their dried specimens of the plants right long since.

What I principally want to make out with these Cyclamens is the difference the different authors fell into in their descriptions. Some of these differences are such as to cause one to suspect that an entire new leaf must be turned over in the matter of Cyclamens. You never heard of any one having succeeded in raising a hybrid Cyclamen, but Mr. Atkins, formerly well known as a respectable nurseryman at Northampton. What, then, would you say, if I could make it as clear to you as crystal that some one else, and a very different kind of person, or persons, had done the same before Mr. Atkins or myself was born? That is really my impression, and I am all but certain that Sweet's vernum Cyclamen, which was also known to and described by Miller, if not by Linnæus, is a hybrid between coum and something of which I am not quite certain; but I think it is, or was, a cross between a late September bloomer, such as neapolitanum (the common English hederæfolium), and an early-blooming coum. I suggested the very same cross in this Journal long ago, but at that time I had no idea about the origin of vernum. But I have since received a true vernum, and I can see how it came into the world. If, indeed, any one can point out to me the exact spot where it may be seen or found in a wild state, then I would send a commissioner to that very spot before I could believe such a thing; and what makes me so certain, is the most remarkable deviation we see in this new race by Mr. Atkins.

I had ten specimens of vernum sent to me by ten persons widely apart, within the last three years, and there is one now fresh before my eyes from the nursery of my early day's assistant in proving rare plants—Mr. Wheeler, of Warminster, not one of which is, or ever was, even of the same race as vernum; they all belonged to the Atkinsii race. Indeed, from what I know of round London, I suspect the true vernum Cyclamen is not on sale in any part of Great Britain.

I have a doubt upon my mind as to the true origin and history of Goldie's Cyclamen ibiricum. I never had that plant in my hands, and only know it from the figure; but I would have no great hesitation in booking it with vernum, and unless the spot of its nativity can be pointed out to my commissioner, I shall have it down as a hybrid from coum by persicum, its origin being different from that of vernum. What is the history or supposed history of ibiricum?

The flowers of the true Cyclamen vernum are twice the size of those of coum, or about that in all the parts. The colour of the flowers is entirely different from those of coum; the colour is lilac, exactly as in the pale red common Lilac of the shrubbery, with a very dark large black mark at the eye, or at the bottom of the divisions of the flower, and when it is left to itself it blooms early in November, never later than the end of that month, unless the bulbs are dried off and are kept dry late in September. My plant has now bloomed three years running, twice before October was out, and last autumn just at the middle of the first week in November. I quite agree with Mr. Gordon, late of Chiswick, who grew it and seedlings from it in the Chiswick Garden, and who well described it in 1843, that it is entirely a misnamed plant, and that it ought to have been called the winter Cyclamen.

The three fresh varieties of coum now on my table are thus written of by the reverend gentleman who sent them. "No. 12 is, I believe, true coum with its plain round leaves. No. 13 I have as vernum; but I cannot see much difference between it and No. 14, which is, I believe, a variety of coum." All quite right and no signs of a vernum in No. 13; but what follows is what I want you to take heed to. "These three are now in beautiful flower, and are lovely objects. Their leaves come before the flowers, and they differ from the first two [white and red neapolitanum, *alias* hederæfolium] in this, that the flowers of the first two come in the centre of the plant [as in persicum] straight from the tuber, whereas these three last send up their flowers outside the leaves, and so the flowers form an exquisite magenta margin to the rich green centre." This has never been so exactly or so truly recorded before this day. A magenta margin was worth living to see, and far more worth the little expense it would cost one to have it just now fresh from the nurseries on one's own table, or on a stand in the window of the drawing-room; but all the breed of coum require as much free air and as little confinement as a mountain Daisy.

But let me follow up the author and authority for the "magenta margin." He goes on to say, "Besides these, I have out of doors a small plant of Cyclamen macrophyllum—or whatever it may be called—and Cyclamen europæum, which was brought to me from the Alps; it is, however, a sickly plant, and I cannot say much about it." Every one who has communicated Cyclamen information for these pages through this channel has repeated the same circumstance—the bad or impaired health of his European Cyclamen through some cause or other. The Cyclamen europæum ought to have been called the summer or autumn-flowering coum; for it is more like coum than like any other, but both its flowers and the leaves are smaller than those of coum when you have it true. The leaves of coum are quite entire on the margin, and quite free from marbling; those of europæum are slightly toothed on the edge, and very strongly marked with the light marbling, which is peculiar to most of them. I cannot find this Cyclamen anywhere, or procure even a leaf of it, and I have not seen it since 1835; but at that time and for the ten preceding seasons I never heard a word about badness of health, or any difficulty about growing it. But it must be a variable plant for Dr. Lindley figured it in the "Botanical Register" under the name Clusii, not long after Sweet had it figured in his "British Flower Garden," 176, under the proper name europæum. That plant bloomed at the Exotic Nursery with Mr. Knight in August, 1825, and also the following year. Even as early as that period this kind was as much confused about London as neapolitanum is now; for Sweet [illegible], writing about europæum, that "the plant sold in [illegible] nurseries is [illegible] the British hederæfolium, of which there are several varieties in the form of their leaves; it also varies with white and flesh-coloured flowers." From this description we see that Sweet, like all the rest of the British authorities of that day, was led away by the error of Linnæus in overlooking the plant named hederæfolium by Clusius. But Sweet was right enough in his estimate of the fragrance of Cyclamen europæum; for he says, "The fragrance exceeds almost that of any other plant with which we are acquainted." And Dr. Lindley endorses the same opinion of its fragrance under a different name by mistake—that of Cyclamen Clusii, which he said "emits so delicious an odour, that no plant can be better calculated for ornamenting a lady's boudoir;" which was wrong at both ends, and only right in the middle, however, as the plant was this, our europæum, the first end; and the last plant in cultivation, not "calculated," but well known, to do any good at all in a lady's boudoir in August, the other end; but the sweet smell from the flowers is the next best thing in the family to magenta margin.

A plant which had puzzled so many, and which so few can report on now in a healthy state, I want to have, to see which was which, and which is so, if it be such, to the present day. Miller mentions a spring-flowering Cyclamen which is lost, if it be not the ibiricum of Goldie (radice inæquale foliis orbiculatis). The leaves of my figure of ibiricum are not orbicular, however; and whether the "root" be irregular or not is more than I can know, but Miller says "the root is not bigger than a nutmeg, the leaves small, the flowers in the spring only, and of a flesh colour, with purple bottoms," but rarely produced seeds in England. Can you tell what it is or might have been? Miller was well acquainted with that Cyclamen vernum, which no one now-a-days seems ever to have seen. It was a late autumnal bloomer with him. "The leaves and flowers of this come up from the root at the same time; the flowers are of a purplish colour, and their bottoms are of a deep red; it flowers late in the autumn, and requires protection from the frost in winter." But there was no regular system of specific names in the time he first published, and his specific name for vernum sounds odd enough in our day: it is this—"Round-leaved Sowbread, with a purple under side," which would apply to coum as well; but of coum he says, "Winter Cyclamen with orbicular leaves, red on the under side," also "the coum of the herbalists."

As the best remedy for sickly Cyclamens and for purposes new to you, I shall give another extract from the author of the magenta margin. When referring to his sickly europæum, he adds, "But I shall give it a dose of cocoa nut—my remedy for everything, and perhaps it may do better another year. That cocoa nut is wonderful stuff. For pot bulbs I use it pure, and I wish you could see a large pot of Veltheimia that I now have; and my Ixias and other such things are looking most promising. I find it very good for potting Geraniums and other such things for keeping through the winter, and anything grown in it may be transplanted with half the usual trouble and risk, as the roots are not torn in transplanting. By help of it I have succeeded in growing healthy plants of the Parsley Fern—a regular teaser to most growers, out of doors for more than two years."

This cocoa nut stuff is more than a hundred miles from his garden; and my garden, in which everything under the sun would now grow, is made up with it and black sand, with a little clay to the depth of 4 feet, the first 20 inches being fully one-third cocoa-nut sawdust, or rather crusher dust, and I winter all my delicatums in it almost pure; but in the summer season all pots in which it is used should be plunged to the rim, as the dry sides of a pot in the sun or on the stages of a greenhouse will suck it dry faster than a ball of compost, although a barrowload of it if placed in a round heap on the pavement would not get dry through and through for the six summer months. It was from this tendency in cocoa-nut fibre refuse that I had to double so many pots in summer, and hit upon stopping the ventilation between the tops of the two pots, and so founded the fact that moist bottom heat could be had outside the window the whole summer without any cost, but with a great deal of pleasure at finding plants, and no plants were ever yet found in such places, and now I have taken to it as a regular plan the year through. But for Ferns and bulbs I have been, from the beginning, indebted to the practice of the author of the magenta margin, to whom I mean to recommend the first magenta bed with a pure margin next week if all is well and that I am not pushed off to some other colour.

D. BEATON.

A FEW DAYS IN IRELAND.—No. 13.

(Continued from page 374.)

TRINITY COLLEGE GARDENS, DUBLIN.

"SURE, and have you not been looking at the gardens, and with all your eyes too? it's to be joking me you are, sir!" was all the answer to a very polite inquiry we could obtain from a rosy-cheeked lad, who scampered off in high glee, no doubt imagining he had taken the conceit out of one who was merely asking for asking's sake; for to their honour, be it said, we never met with more courteous attention to all such inquiries than from men and women in Ireland. We received the above answer on our first morning in Dublin, after going all round the outside of the College, and looking through the railings at the men cutting the long grass in what is called College Park; and after we had come to the conclusion that the garden so long associated with the honoured name of Dr. Mackay, and more latterly with that of Mr. Bain, must be somewhere else than in the immediate neighbourhood of the College. We found next day that these gardens were south-east the best part of two miles, and the road to them passing through streets and squares, with the sides planted with trees in the Boulevard style, the property and the doings, so far as we recollect, of the late lamented and much-loved Lord Herbert of Lea. We felt it to be a great honour, after meeting with Mr. Bain, to be introduced to and to partake of the hospitality of the venerable Doctor, who is yet hale and hearty, and with whose name we had been familiar for the best part of thirty years.

As far as we recollect the Doctor retired from the curatorship in 1855. The Council of the College, to whom the gardens exclusively belong, honouring themselves in the honour and attention they bestowed on an old faithful servant, Mr. Bain then entered upon the duties of Curator; and of the propriety of that appointment, perhaps the highest authority stated at the time that "a better selection could not have been made." Mr. Bain, in addition to other spheres of improvement, had also been a favourite pupil of Dr. Mackay's. This may somewhat account for the complete and genial confidence, and the strong reciprocal attachment existing between them, which even a stranger could not fail to notice at a glance. We are sorry to say that we have met with somewhat similar cases, in which there was anything but the same sweet accord. Standing up for the rights and fair fame of our order, it must be confessed, nevertheless, that there is one weakness among gardeners that is too generally developed, though there are noble exceptions, and that is the unmanly and the unseemly habit of depreciating the doings of predecessors. Bad enough in any case, it reaches the height of painfulness when that predecessor is advanced in life, and is passing the remainder of his days near the scene of his former labours. Few things would hurt the feelings of an old gardener more than getting the cold shoulder from a young successor. How much better to exhibit something of a filial and paternal regard! The younger will almost be certain to be the greatest gainer, there ever being an advantage in having the energy of youth balanced with the experience of age. The inflicting of a single sorrow may well cause a pang of remorse; there never will be a tear of regret because we had it in our power to cause the eye of any, and especially of the aged, to sparkle with joy.

A slight inspection of these gardens, which was all we could give, convinced us that objects of purely botanical interest were deemed of chief importance. This is just as it should be. If botanic gardens condescend to humour too much the prevailing tastes of the day, their distinctive features and objects are apt to be lost. It would be well, if in the present rage for bedding plants, &c., young men should have access to such gardens as this, and get an idea of the importance of systematic and physiological botany. Insensibly we began to feel the importance of forgotten and neglected studies, and to our mortification soon found that we could keep company for so little way with Mr. Bain, who seemed to be as thoroughly at home in the recondite phenomena that take place within the spore-case of a Fern so as to insure fertilisation or hybridisation, as our friend Mr. Bèaton is thoroughly conversant with the mode of insuring giant or pigmy Pelargoniums at will.

Instead of anything like a regular description we will merely notice a few things that chiefly arrested our attention.

First. The walks were commodious, and in excellent condition. The rains had fallen heavily that morning, but the paths were firm, clean, and easy for the feet. If you put clay sticking to your feet out of the question, hardly anything else is more unpleasant to walk upon than shingly gravel, in which your feet sink, or which keeps rolling and moving with you as you go. Many a splendid garden has left an unfavourable impression on the mind because the walks were dirty, rough, or uncomfortable.

Second. The walls were well covered with a general collection of half-hardy plants, and some which require a greenhouse in general north of London. Along with such plants as Glycines, Escallonias, Evergreen and Trumpet Honeysuckles, Roses, Jasmines, Clematis, especially all the tenderer kinds, Magnolias, fine plants, &c., we noticed large plants of the Ipomæa jalapa in bloom; a very fine specimen of Berberis fascicularis covering a large space of wall; and good plants of B. Darwinii, Wallichiana, Bealii, Fortunii, japonica, dealbata, macrophylla, &c.,; Tecomas of sorts; a nice plant of Schinus dependens (?) resembling Mullii, with fine graceful foliage; some fine plants of Edwardsias, as grandiflora, microphylla, &c.; almost every species and variety of Ceanothus, the azureus, when true, still bearing the bell for beauty; good plants of two or three kinds of Colletia, spinosa being generally found the hardiest of these Chilian and Peruvian plants; several good plants of Pistacia, as the Terebinth and Mastick trees; Rhus trifoliata; and a goodly number of Australian and Cape plants, either getting established or getting a fair trial as to their hardiness in such a climate. Instead, however, of mentioning plants generally found on such walls in England before the frosts of last year, it may be more useful to mention a practice adopted here with all plants against walls that are considered in the least tender—namely, several of the lower shoots are layered in the border pretty close to the foot of the wall, and these are easily protected in severe weather; whilst those against the wall are left to live or die.

Third. The trees and shrubs on the lawn are, in general, compact, dense masses, and are interesting not only on that account, but also from the treatment they have received to make them so. Among fine specimens of different coloured, and crisped, and plain-leaved Hollies, there is a fine specimen of Hodgin's Holly, a fine, plain-leaved kind, that we do not recollect seeing before. It was well stored with berries, which are rather scarce things this season. The various kinds of Arbutus, as andrachne, hybrida, procera, &c. Several varieties of Alaternus, Laurustinus, Portugal Laurel, Rhododendrons, &c., were close and compact masses of growth. Among the Pine tribe we noticed good young plants of Wellingtonia, dense specimens of Thujas, Cupressus, Juniperus, and masses rather than plants of Cryptomeria, Taxodium sempervirens, &c.; also, nice plants of Picea nobilis, Nordmanniana, and fine specimens of the freer-growing Pinuses, as austriaca, palustris, Pallasiana, &c. Some specimens of Pinus excelsa were extra interesting, not so much for their height, though that might be from 20 feet to 30 feet, as from the density of growth, and the great width of the branches at the base, much more than the height of the plant, sweeping over and covering the grass like a dense bed. Mr. Bain has partly promised to give us the dimensions, width of diameter of branches, as well as height of tree of some of the best of these specimens. In the case of these fine excelsas, we understood that little or nothing had been done to produce such a striking effect, but most of the other dense specimens had been carefully treated to produce the desired result. A dense habit of growth being desirable to resist the violent gales from the south-east, and the trees and shrubs naturally being inclined to grow rather open and thin.

To neutralise this, evergreen shrubs and trees had been treated in different ways, when the branches get thin and scraggy. In some cases they were pruned severely back, so as to produce new and healthy shoots, which were carefully shortened when young, &c. In other cases, the head of the shrub was bent down to the ground, and the young branches layered, and when they grew vigorously it mattered little what became of the old plant. The layering system had also been adopted with the whole of the Pine tribe, including Cryptomeria, Thujas, &c., and the effect in producing dense masses was very striking. Young plants are treated much the same as hard-wooded evergreens. Older plants of the resinous tribe, that are getting thin and unhealthy, have only the lower branches layered, and these soon form dense, healthy masses. Healthy plants, but getting thinner and opener in growth than is desirable, have only the lower branches pinned or tied down to a more horizontal position, and that generally induces a denser habit.

Layering is, however, never resorted to, in the case of a healthy, fine-habited plant, unless for increase of stock, as in every case it robs the original stem of its vigour. Its effect in changing an unhealthy specimen into a vigorous, dense mass, that on passing you would not know from a single plant, is very striking. In layering, the bark is merely pared off, the wood is not touched at all, no slitting, tongueing, or anything of the sort. Perhaps the moist climate may have a little to do with the success.

A similar mode is adopted with valuable but leggy and unhealthy greenhouse and stove plants, and thus by bending and layering the shoots of the head, fine masses and finer individual plants are obtained much sooner than by striking and growing in the usual way. Some of the tenderer shy-flowering Rhododendrons have been induced to bloom freely by bending down the shoots and tieing them in a recumbent position, the sun had so much more power in concentrating the juices, that flower-buds were formed on the points of the shoots thus reversed. Sufficient vigour was in such cases secured in the ordinary way. We saw some fine specimens of Edgworthii, &c., thus treated. We did not notice the thing ourselves, but a friend told us afterwards, that by the old system of ringing the Dracæna draco was induced to bloom some three years ago, and by a deepish incision into the stem of the Sabal Palm, that strong-growing variety was made to fruit when of a moderate size.

Fourth. Leaving all notice of herbaceous plants in beds and borders, we would just state, that in a shady place near a wall is a full collection of British and Irish Ferns. Among these we noticed a fine specimen of a Lady Fern, from the county of Mayo, partaking of the properties of cristata, multifidum, and others. The most striking thing, however, in that way, was the variety of the Lady Fern, called Frizelliæ, found by a lady of that name in the county of Wicklow. Some of the fronds come like the common Lady Fern, and others come long but furnished with pinnæ at rather open intervals, resembling in appearance those of Pteris rotundifolia In plants in pots in-doors, there was considerable variety as to the extent of the different forms, but all had these forms less or more, and in some cases there was hardly a trace of the true filix-femina. As far as we recollect, Mr. Bain has raised plants from spore-seeds, and also by striking the round-fronded pinnæ, and the plants presented very much the same appearance of those obtained from dividing the roots, with the exception of the new form being rather more abundant and constant. This form may, therefore, be considered distinct and lasting.

R. FISH.

(*To be continued.*)

PINE APPLE CULTURE.

(*Continued from page* 232.)

WATERING, SYRINGING, AND ATMOSPHERIC MOISTURE.

THE cultivator having procured and provided a good soil for his Pines, he should next provide a supply of good water. Every writer on this point, myself amongst the rest, recommends rain water as the best to water all plants with, whether in pots or in beds of earth. Perhaps some reader may inquire why this kind of water is better than pump or pond water. The reason is because pump water is generally hard—that is, feels hard to the skin when washing in it and curdling soap. This hardness is caused by its containing an excess of salts of lime or magnesia, which is poisonous to plants. Stagnant pond water contains in excess carburetted hydrogen and other gases equally, if not more, injurious to plants. If, however, hard water must be used, the injurious properties would be counteracted by putting in amongst the water about a quart of ammoniacal liquor from the gas manufactories to every hundred gallons a few hours before it is used. River water approaches the nearest to rain water in goodness for watering purposes. Rain water, on the other hand, contains rather more than 4 inches of [illegible] gas, half of which is carbonic acid gas, and the remainder consists of sixty parts of nitrogen and forty of oxygen gas—all highly beneficial to vegetation. Every observing cultivator must have noted how much better his plants, whether in pots or borders, throve when rain falls than they do from water applied from the garden-pot in dry weather, however bountifully he may supply that necessary liquid. This well-known superiority of rain water makes it desirable to preserve it for watering purposes, especially [illegible] under glass. Not a drop, if it should be wasted. To keep it in quantity tanks sunk in the ground are the cheapest of reservoirs. These may be made water-tight by puddling with clay well-tempered, or by a coating of the best cement. All the rain water that falls on the buildings in the garden should be caught in gutters and conveyed by spouts to the tanks. If possible, a good large cistern should be placed inside the Pine-stove, or in a warm shed behind, from which it may be conveyed by a pipe to a tap inside. From such a cistern so placed, the water will always be warm enough to give to the plants. Should there be a long succession of dry weather then the water from the tanks should be pumped up and conveyed into the cistern to be warmed. If there is no cistern it will be necessary to have some water made hot and mixed with the cold to warm it. The water should always be used at a temperature of about 80° in summer and 60° in winter. The maximum quantity of water should be given when the plants are growing freely; enough should then be applied to thoroughly wet the soil in the pots, or when the plants are planted out enough should be given to moisten well all the soil in the bed. This to be repeated, as the soil dries either by evaporation or by being taken up by the plants. The minimum quantity would be given during the short days of winter; the plants will then be in a rather dormant state and require but little water. It is not wisdom to give a measured quantity at any time of the year. In bright, clear, sunny weather more will be needful; and *vice versa*, in wet dull weather less will be required. In that respect much must be left to the discretion of the manager. When fruit is swelling also water freely; but when changing colour for ripening withhold it altogether, or the flavour will be injured. Also just after repotting no water will be necessary till root action recommences. Should bright sunshine occur just at that time, to prevent the plants flagging it will be better to shade the plants during the middle of the day than giving water. The cultivator should always remember that the Pine Apple is a succulent plant, the roots of which are easily destroyed by excessive moisture in the soil. In winter, should any water lodge in the hearts of the plants, whether from the watering-pot or from a drip from the roof, it should be instantly removed; for this purpose I have used a long tin tube, and drawn the water out by suction with my mouth. If it is allowed to remain any time the plant containing it will certainly rot off.

WATERING WITH LIQUID MANURE.—The size of the fruit, especially of the larger-growing kinds, may be greatly increased by watering the plants with liquid manure. This should not be given until the fruit is visible in the heart of the plant, because if the plants have been grown in the compost I have described, or one approaching to it, and well managed in other respects, the plants will have grown sufficiently large and strong to produce large fruit, and if too much nutriment is given to them they probably will continue growing almost indefinitely: therefore withhold the liquid manure until the fruit is discernible, then water every third time with this enriched water. When I grew the large Providence Pines I made my liquid manure of the following ingredients—pigeons' and fowls' dung. I got all I could of this, and filled a large tub one-third full; then I put in about half a peck of quicklime and as much soot. On these I poured boiling water till the tub was nearly full, and stirred the whole up well together. The lime and hot water effectually destroyed all insects, and their eggs also, and the soot and lime killed any worms that were in the pots containing the Pine plants. I allowed this mixture to settle and cool down to 80° previously to using it. With this liquid manure and the compost together I was enabled to produce very fine fruit. As an instance I may mention that one morning I cut five Providence Pines, that, altogether, weighed 45 lbs. from five three-year-old plants. They were of the variety named the New White Providence.

SYRINGING.—The syringe should be in requisition during the fast-growing season, which may be said to commence in March and end in September. In the earlier and latter part of this season syringe gently in the morning, and during the summer months in the evening also, omitting, of course, to syringe in very wet weather. Always syringe with warmed water. Observe, however, not to syringe plants in fruit when the fruit is ripening.

TO PROCURE ATMOSPHERIC MOISTURE.—Syringe the hot-water pipes and flues during the growing season in the earlier and later months morning and evening, and in hot summer weather three times a-day. It is a good plan to have troughs on the hot-water pipes and dish-covers on flues, and to keep such hollows full of water during the growing-months—that is, from March to September. This moisture in the air is of great service to the plants; it keeps them growing kindly and freely, and is a great preventive of the increase of insects.

Air.—A very general direction might serve for giving air—namely, give air every day not actually frosty. But that wholesale instruction, though it is quite sufficient for an experienced cultivator and manager of hothouses, is hardly explicit enough for a young beginner.

Through the months of *November*, *December*, and *January*, give air only for two hours daily—that is, from eleven to one, unless a very sunny day or two occur, then the air may remain on longer; on the other hand, should wintry weather occur, such as heavy snow, or rain, or very severe frost, then keep the Pine-stoves closed up till the weather changes.

February, *March*, *and April*.—Increase the quantity of fresh air as the days lengthen, more especially towards the middle of March and through April. Frequently we have fine warm sunny spring days, then give air by 9 o'clock A.M., and continue it on till 3 P.M.; but in cold weather give air accordingly, shutting up earlier, and filling the stove with steam.

May, *June*, *July*, *and August*.—The weather through these four summer months is more settled, and, therefore, more air may be given—indeed, through the two last-named months a little air may be left on all night.

September and October.—These two months complete the year. The air given should be reduced gradually, so as finally to assimilate with the quantity as directed for the winter months.

The object of giving air is not only to reduce the temperature of the house; but also to let out foul air, and let in fresh pure air, which invigorates and strengthens the plants, and gives a greater amount of flavour to the fruit. T. Appleby.

(*To be continued.*)

ICE-HOUSES VERSUS ICE-STACKS.

The late frosty weather seems to have set us all by the ears on the subject of ice-preserving; and assuredly in the multitude of councillors there must be safety, and I congratulate myself on my view being so ably backed by Mr. Thompson, at page 355; Mr. Fish also coincides with some of my ideas. On the other hand, I am equally thankful to Mr. Beaton for putting me right in my chronology regarding "Loudon's Magazine," which might not have started into life until 1826, instead of 1824, as stated by me; but certainly some of the Numbers of that periodical did treat on subjects connected with ice-keeping. Applying hot water to the broken ice at the time of ramming it down in the ice-house was assuredly recommended by one writer to that useful Magazine; but I have not the volume by me, and must therefore only argue on memory.

This, however, does not affect the case in hand, for I did not assert that the plan of stacking ice in the open air was discussed in the gardening papers at that time, but that there were practical experiments made that way, as I was acquainted with a place on the boundaries of Cumberland, where an ice-stack was made on the north side of a steep hill, and sheltered, or rather shaded by trees, in the winter of 1828-29, and I was told that the season I speak of was not the first one that ice had been so stored away, and kept pretty well. I believe the heap was supported at the sides by posts and faggots, or something of that sort, and the top covered over thickly with fern, which abounded in the neighbourhood. I, however, only guess at the latter part as being likely; the fact of there being an ice-heap at the time spoken of I am more positive of, an intimate friend of mine having assisted to make it. Enough, however, has been said on this head, and no one is more grateful than I am at such excellent suggestions as those made by Mr. Earley, of Digswell, page 335, and I believe his observations can be confirmed by several, whom I hope to see communicate their views or experience in the pages of The Journal of Horticulture; and as the new-fashioned ice-stack seems to have no lack of supporters, I will endeavour in some measure to defend the cause of the old-fashioned and much-abused ice-house, and will even take it with all its faults, non-ventilated and all, as being the most convenient, economical, and best place to keep ice in, that has yet been discovered. In taking this general view of the question, it is not fair to take an isolated case of an extreme character; but let every one speak fairly and candidly, and if I leave the discussion of the last of the three qualifications alluded to, "that of being the best place to keep ice in," to be decided by other contributors, I will endeavour to combat the views of the ice-stacking party on their own grounds, which I believe they affirm to be convenience and economy. Let us therefore see how far their contrivances justify their terms, or whether they may not be both linked on the side of the poor old ice-house. Beginning therefore with the first of these—

Convenience.—As local circumstances will have determined the site of the ice-stack, it will most likely be found in just such a position as the ice-house ought to occupy: therefore, as far as the carting and storing away of the article are concerned, both the contrivances may be on a par. It is therefore only on the subject of obtaining the ice when wanted, that it is necessary to make the comparison, and assuredly the merit lies entirely on the side of the ice-house. Opening a door, or perhaps two or more doors, and stepping upon the naked ice, is an operation much quicker and easier performed, than removing a large quantity of straw and other litter, and replacing it again, when a barrowload of ice is wanted; and it sometimes happening that some article particularly wanted to be preserved can be done so in an ice-house, which cannot be done in an ice-stack, I believe the greatest advocates of the latter will admit the merit of "convenience" to be on the side of the ice-house. I will now venture on the vaunted ground of economy, on which they base their claim to superiority, and see if I cannot prove that a false impression has not gone abroad on that subject. Leaving, therefore, the item convenience, let us take up the much more important one of

Economy.—On this head I will as an example take our worthy correspondent Mr. Earley's plan, which Mr. Beaton lauds so much, and which I by no means find fault with; and, as the readers of The Journal of Horticulture will have perused his clear and well-defined mode of operation, I need not repeat it here, further than by saying that, as I understand him to say, a wall of straw 2 feet thick surrounds his ice, and a top thatching of quite that thickness also, and I believe an outer thatching of the sides is also included; the straw forming the walls being the best wheaten straw, and trodden firmly down between the two hurdles forming the inner and outer framework of the wall. Now, as all arguments on economy ought to be settled by figures, let us see how straw and bricks can be compared together, and I may say that here a load of straw comprising thirty-six trusses of 36 lbs. each costs quite as much as one thousand bricks; and, in most localities where bricks are made within fifty miles of London, the comparison is about alike. I may also add without going into exact calculations, that five thousand bricks would build an ice-house capable of holding sixty loads of ice or more; and, when once built, its durability may be estimated by hundreds of years; for, unless some unusual convulsion of nature occur, it is difficult to say how many centuries an ice-house, or rather the stone or brickwork of it, will last. Contrast this with the hurdle and straw casing of the ice, and we shall find that the straw alone for the wall and covering of the ice-stack will cost as much in one year as the bricks do that build the ice-house; besides straw will only last one year, and a covering on all sides rammed down, and 2 feet thick, would require quite five loads of straw, and this to be removed every year. It is, however, only fair to say that the other items of expenditure in the ice-house exceed that of the ice-stack; but, as assuming the expense of digging an ice-well, putting in a drain, erecting the structure and putting on the doors—in fact, doing everything to it that was wanted, cost three or four times the cost of a temporary erection and covering for an ice-stack, is a yearly expenditure of one-fourth of what would procure a permanent structure a judicious and economical affair? Most certainly not. And according to the recommendation furnished us by Mr. Earley and Mr. Beaton, the expense must be quite as much as I say, and all the other operations of filling, &c., are on the whole more expensive in the ice-stack than in the house;—where, then, lies the "so-called economy?"

Much has been said about damp destroying ice, but I feel certain a strong current of mild warm air wastes it more. In the middle of January last we had a sharp frost from the 16th to the 22nd, the ice at the latter end of it being 2½ inches thick, or more; and an ornamental basin in our garden being that thickness of ice I took a part of it off in large pieces, some of the pieces were laid flat on the ground, and some raised on edge, or rather propped up from the ground. The first day's thaw was mild and moist, the next day was a brisk wind, and as Mr. Thompson justly observes, it very quickly licked up all the ice which was exposed on all sides to its action, while that lyi flat on the ground lasted longer, and that in the water longest of all. Reasoning from that, I, therefore, cannot see in what way a dry current of air over ice can do other than waste unless the temperature of that current was under 35°; for, assuming it to be dry, and about 50°, it would simply withdraw moisture from the ice the same as an east wind or very dry air withdraws water from our ponds, plants, and even our lips. And sucking moisture from ice is exhausting it of its very lifeblood, that I confess I cannot see on what grounds the advocates for ventilation can found their plea upon; for I confess being unable to account for its wasting by any other agent than heat, and cannot but think a dry atmosphere of 55° quite as likely to waste ice as a humid one of the same temperature, as the latter being already charged with moisture is not likely to rob the ice to the extent the other would. I am, however, far from assuming this to be absolutely the case, but I believe it to be so; and, again, I am sorry to differ from Mr. Beaton, who in a late communication makes a damp atmosphere waste ice seventy times as fast as a dry one, by which I take him to mean that a quantity of ice that would keep one day in a damp air would keep seventy days in a dry one. None of my ideas approach anything like this, as I confess there are few ideas, contrivances, or inventions, that can be reasonably said to exceed those previously existing in more than a twofold degree; and in the matter of ice-keeping I have yet to learn that our grandfathers' maxims of excluding all air from it as much as possible was wrong, as I have seen no artificial rule which proves so; and certainly all natural law as previously explained by Mr. Thompson and myself in a former article, tends to prove that currents of warm air waste ice and snow faster than anything. More, therefore, need not be said, although collateral evidence bearing that way is far from being exhausted. I would rather, however, have the practical statements of others. J. Robson.

AN EFFECTIVE WASH FOR OLD WALLS INFESTED WITH WOODLICE.

Your remedy given in page 353 is sound enough, but rather troublesome. Your correspondent "Worcester" should unnail his trees; take 4 lbs. of soft soap to the gallon of soft water, well mixed, and apply it with a new painter's brush, filling every crack and crevice with it. A cheaper and equally or more thorough insect and insect-egg killer is 1 lb. of Gishurst Compound to the gallon of soft water applied in the same way. These mixtures are most killing to the whole tribe of insects. The Gishurst Compound is one-third cheaper than soft soap used in the above proportions; and, if the wall is thoroughly dressed, by inserting the brush well saturated with it into every crevice it will effectually prevent woodlice from sheltering themselves in them all through the summer.—An Old Gardener.

THE CAMELLIA AND ITS CULTURE.—No. 3.

A very opportune time for *repotting* general stock is during their season of rest. When, it may be asked, do you fix that period? Immediately after they have done flowering, and from four to eight weeks thereafter, according to the particular period they are in bloom. For instance, plants that have done flowering before the "turn of the day" can have two clear months of comparative sluggish action,—for so long as a plant is in life, be it deciduous or evergreen, there is always a circulation of the juices distending, enlarging, and solidifying the plant—certainly at the so-called season of rest in an infinitesimal degree, and the beautiful piece of anatomical mechanism only thrown out of gear when the sap or lifeblood is frozen, before it is necessary or even wise to call forth all their physical energies into play; while those that are retarded until March and April by the force of circumstances, the length of the day, and the greater amount of warmth and solar radiation as the sequence, push away without, and point out that now is the time for the addition of artificial heat.

In all large collections there is not much difficulty in having flowers from nine to ten months in the year if such were in demand; albeit, it requires both time and skill on the part of the cultivator to attain this. Of course you will have but a small sprinkling to begin with, gradually getting larger and larger, and waning out towards the end of the season in like proportions. Here we vary after her, with Lady Hume's Blush, and the Old White early in September and finish up the season in the first week of June with Beali, or Leana Superba, and occasionally Princess Bacchiochi. But we require to retard in the one instance and accelerate bud-formation in the other—the former by far the more difficult task of the two. Those who merely read over the matter out of pure love for, shall we say?—the charming queen of winter—who have little knowledge of practical details, and who may be inclined to pay homage to my idea, may possibly exclaim, "Oh! I see; if they are wanted early they can be put into strong heat; and if late, retarded in a cool greenhouse." I beg in return to say there is no more stubborn subject in the whole plant community to force than a Camellia in bud on grouse-shooting day. The fact is, from the time the buds are properly formed they should be, approximately speaking, comparatively at rest, else nothing but failure, either in the flowers when expanding being flaccid and abortive, or the buds dropping off altogether, will be the result. But more upon this point when we come to discuss a subsequent division of our subject.

To return to repotting. We say there is not a better time for the operation than during the probationary period of their season of rest. They can be thoroughly examined, cutting away any decayed rootlets, picking out any sodden mass which the roots may have turned away from in disgust. For we are of opinion, backed up by experience, the roots have the power of selecting nutriment best suited to their wants, if within their reach; if not, it incapacitates their formation. And shaking out worms and worm-casts, they may either be liberally shifted or otherwise, according to the wants and accommodation of the parties concerned. If they are liberally shifted in the compost already treated of, there will be less demands for water and none at all for manure water for some time to come. If, on the contrary, they are wanted to produce a given quantity of bloom in as small growing space as possible, they can be reduced and repotted into pots of the same size with fresh compost; and as soon as the pot is full of roots, liquid manure or guano water, which if applied cautiously is a good and safe stimulant, may be administered. It is really astonishing, even to the practical man, what a yield of bloom may be produced from a plant in a small-sized pot. It was only the other day that I met a few gardeners in the great commercial city of the west of Scotland; and as usual at these fortuitous occurrences, some one or more points of gardening do turn up and are generally very pointedly introduced and discussed, for "in the multitude of councillors there is safety." "I have grown Camellias," says a gentleman, who has for the last three years retired into private life with a handsome pension awarded him by his employers, "for the last five and thirty years, and I am sensibly impressed that too much shifting defeats rather than furthers your purpose—as an instance of which, I had a plant growing in a six-inch pot from Mr. ——, pointing to a gentleman across the table, which he had not shifted for ten years previously, and I grew it fifteen years afterwards in the same pot without so much as examining it, and it flowered year after year to my satisfaction, and" somewhat warmly, "if I had been there I would not have shifted it yet." So much, we say, for the exception to the rule in that particular-sized pot.

You may have fine Camellias. I should not like to be the one to take credit for an absolute observance of any given code, with exceptional treatment, as they are very patient of fatigue; but if you wish a first-rate plantation of them, we would suggest dissimilar council. As long as they are in portable-sized pots, it is judicious to examine them every year. If scrutiny, such as the kind suggested in the preceding paragraph be necessary, by all means do so. If the ball is undisturbed by worms, its drainage perfect, the compost not at all enveloped and enwrapped with roots, place the pot in an inverted form, slip it cautiously again over the ball, turn the whole in their proper position, give the pot a "settle" on the potting-bench, see or feel with your thumb that there be no passage between ball and pot, so as water when applied may penetrate and percolate as equally in the centre as the exterior, and replace such plants in their proper position for another year. To those that require repotting observe the following treatment:—Recourse, in the first place, must be had to proper sanatory measures, such as washing pots outside and inside, placing a large crock over the drain-hole or holes, and a good handful of smaller ones round about it so as to cover the entire bottom of the pot; and in order that the finer particles of earth may not be washed down amongst these tiles, &c., place a layer of sphagnum or fibry matter rid of.

r particles, and then go to work with the soil, on the dry as diligently as you please, leaving from a quarter of an a whole inch, according to the size of the pot, for a supply er necessary to penetrate the whole depth of ball. With ou will have a sure foundation. An implicit observance will be specially necessary if plants and pots are large tended to remain from five to ten years, which, in from h to 20-inch pots and larger, they are well able to stand. also remark and remind those who are not so well up in t, what is of paramount importance—that the plants should the dry order; also, when they are examined and repotted to admit of being more advantageously handled, in the est sense of the word, just for all the world in as good ion as you would expect the ground to be when preparing wing your Onion-beds.

bit.—I do not know that it would be of much consequence lly to single out into groups those that have handsome hose that have ungainly habits; those that require to be d, so to speak, and those that improve with generous treat-

Happily, however, those lanky ungainly fellows that have lency to become leafless below are not numerous. Having t and veneration for old age, we question much if you point out a more perfect example of good habit, and, I add, decorative effect, than the old white (alba plena) f. Of course she must give way to the finer-formed petal rs. Abby Wilder, Teutonia, and Feastii, on whose merits all have something to say in its proper place; but these r more fickle jades to induce to show their comeliness than venerable and venerated grandmother. The most perfect of a Camellia of comparatively recent introduction is rii. It is also a first-rate flower, and a free bloomer. It rs to me to be a distinct progeny of a handsome dwarfish with flowers of a medium size—something between Sa- a rosea and imbricata. Taking habit and quality of bloom consideration, I would say, keeping off some of the more introductions, which have not had a severe-enough trial, 'altevarada and Wilderii are the two finest that we have of se-coloured tribe; but Sacooi nova will beat them both, ideed all of that section, only it inclines as a plant to get what bare at bottom.

ly Hume's Blush, again, on the other hand, is about the awkward habit, running all to terminals, of any Camellia t; and the only way to do it well is to train up a single for 6 feet or 8 feet, like a standard Rose, and then tie the laterals earthwards, and keep pinching and cutting backwards until you form a bush. Carswelliana, Mat- ana, and others of that straggling class, would give much satisfaction served in the same way. They, to be ed successfully, require a low diet at bud-setting time; igh it is right to say that Carswelliana is generally a free ier.

pyramidal form in the majority of instances is that most for setting off Camellias to best advantage; but there be ample space in the growing season to give them full t of light and air, else the lower tiers of branches ive way. Such a form can be regulated if there is a fair e to begin with, either by pinching out the wood-buds that kely to go astray, or by using the knife to such as are erbalancing a weaker side. In too many places, however, is such a thirst for variety and numbers, that habit is quite oked. In nursery collections we probably cannot expect a due observance of fine form, although we often have had ion to deprecate the bare-legged plants that have passed gh their hands, which are luxuriant enough but bear the of their lower branches being suffocated by growing too together. We are aware that the Continent is the great of supply; for we have seen hundreds, I ought to say ands, of them beautifully set with bud, come to a London ry where the writer spent a part of his time. In garden tions there might be a more general observance given to mportant point. To be sure, flowers can be produced of ly fine quality in plants that are allowed to "hang as they " and good flowers in all places are the order of the day; he artistic eye seeks for form as well as beauty, and the un- ted eye can all the more readily appreciate it if both have fair share of attention.

e bush habit is best adapted for very dwarf growers, such incess Sophia and Wilderii. Bushy heads of foliage have r best effect in clear single stems, and show off any variety d advantage. Those that have straggling habits, as was suggested above, can be tied down to check the exuberant flow of sap; while those of general good habit can be trimmed like a Portugal Laurel or an imitation Orange tree, if such an artificial cut was at all desirable. No plants stand the free use of the knife better than Camellias. They break away when cut back either slightly or severely, so that if artistic effect be an object regardless of the sacrifice of a few blooms for a season or two to any very wayward subject, the operation can very safely be performed.—JAS. ANDERSON, *Meadow Bank, Uddingstone.*

DIGGING AND TRENCHING.

"D. W. P." and other correspondents having asked the charge per acre for these operations, we applied for information and the following is the result.

It is not easy to say how much a man ought to dig in a day, in the absence of all information respecting the kind of ground that is to be operated upon; but in Kent, where many thousand acres of orchard and Hop-grounds are dug over every year, it is customary to pay from 16*s*. to 20*s*. per acre, according to the description of ground to do, and this is not dug deep on account of the roots, neither is it broken after being turned over, but simply turned over in the rough. Trenching about 20 inches deep costs about 9*d*. per rod, or £6 per acre, and if the ground be stony the stones are generally picked out and paid for about 10*d*. per load or ton. Roots, if the ground had previously been a wood or plantation, are also paid for separately. The usual practice is to keep the top soil to the top again, unless the ground be very good indeed, and sometimes for particular purposes when a field is trenched, a number of men, about twelve perhaps, are divided the whole length of the furrow, and fork the bottom of each furrow up before the plough returns to cover it in. This is better than the subsoil plough; but as your case may perhaps not require work done on so extensive a scale, we may say that bastard trenching, which is supposed to be a good spit and a shovelling deep, cannot well be done under £2 10*s*. or £3 per acre, if done properly. Much, however, depends on this, as well as on the kind of ground to operate on.

MILDNESS OF THE CLIMATE OF THE FAR NORTH.

LET us first remind our readers that Stornaway is a town of Lewis, one of the most northern of the Western Isles of Scotland, being in N. lat. 58° 12′. Now, from thence we have received a note, dated the 3rd instant, obligingly written to us by Sir James Matheson, Bart., accompanying "specimens of the vegetation as indications of the temperature and climate of the place." These specimens were as follows:—

Spanish Broom, with shoots 3 inches long.
Common Broom, flowers open.
Daphne mezereon, flowers opening.
Rhododendron Nobleanum, in flower, and has been so since January. Also,
Larger Periwinkle (Vinca major), in flower.
Fuchsia, leaf-buds open.
Catkins of Alder, Willow, Hazel, and Birch.
Ribes sanguineum, buds opening.
Dog Rose and other Rose-buds opening.
Elder, leaves 3 inches long.
Whin, or Furze, in bloom.
Daisies, Anemones, and Primulas, in flower all winter.
Snowdrops, in flower all January.
Lonicera tatarica, in full leaf.

IN MEMORIAM.

How strange the pranks that memory plays us, and how odd what people call association of ideas! Here am I now running my thoughts to some two and twenty years back! Again am I standing in a greenhouse, doubtless now numbered amongst the things of the past, watching, with eager eye, the gardener as he takes to the bench plant after plant; and, writing with an ecstacy of delight, which I fear it would now be impossible to raise, the names of Pelargoniums, of which, through the courtesy of the owner, I am receiving cuttings, and all occasioned by a glance at the obituary of Monday's *Times*, in which I read "The **Rev. Richard Garth**, of Farnham, Surrey, aged 71."

Yes, in that long-past time he, and one still amongst us, Mr. Foster, of Clewer Manor, astonished the world with the advance made in that lovely and popular tribe of flowers. "Garth's Sylph" and "Foster's Joan of Arc" were then the fair rivals, and well do I remember what a rage they created. Surely we had attained perfection, it was said; and now not one of the flowers of those days would be looked at—they were badly shaped and faint in colour. But none the less is the debt of gratitude we owe to those who saw what was to be done and did it. Each hit on a separate strain.

Mr. Foster's were rather more cupped in shape, and this they have maintained until the present time, although marvellously improved in size and shape generally; while the broad open petal has been seized upon by Mr. Hoyle, and under his judicious hands attained great perfection.

Some years after the period to which I allude, I chanced to be in Farnham, and called upon Mr. Garth. He kindly welcomed me, talked over his flowers; and, though he had even then withdrawn from raising seedlings, yet his heart was still in the work, and he watched with eager interest the labours of his successors. And now he is gathered to his fathers! His name will long live in the recollections of the elder generations of florists; and we, mayhap, may tell our children of the kindly and hearty clergyman, who, no way forgetting his own sacred calling, did yet contrive to interest, amuse, and profit many of his fellow travellers. He honoured the craft, and we trust it will honour his memory.—D., *Deal.*

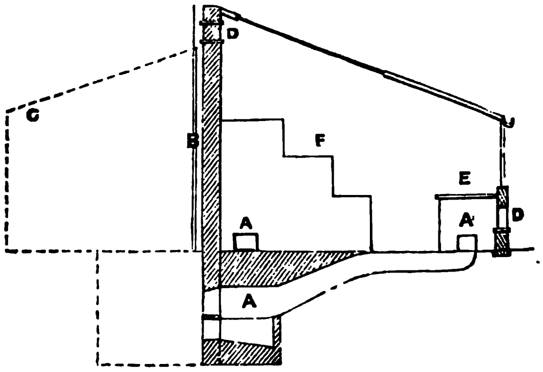
SETTING CONICAL BOILERS.

I think, if your correspondent "P. W. M." will have his boiler placed upon the seating forming the sides of the furnace-hole, a distance of about 15 inches above the furnace-bars, and then carry the flue twice round the boiler, one above the other, he will find it heat to his satisfaction. We have three conical boilers here fixed in the above manner, which are all that can be desired. The difference of a few inches in the distance of the boiler from the furnace-door will not at all influence its heating powers.—G. S.

CONSTRUCTING A SMALL GREENHOUSE.

Different sections of houses have been given lately which will suit your purpose. (We are answering "F. B.," of Galway.) You prefer a lean-to house. That is easiest kept heated, but unless where stone or bricks are handy, it is not the cheapest. However, keeping your requirements as to a lean-to in view, a house with 10 feet of a back wall, 12 feet wide, and 6 feet high in front, 14 feet long, will be a very nice little house, and so far as use is concerned, it matters not whether the back and front walls be of posts and wood, or stone, or brick. If of either of the latter, it would not be worth while to have them less than 9 inches thick. Posts 4 inches square, and boards 1 inch thick, would do if they should be preferred. If resolved to make the front and ends with boards neat and secure, stretch stout calico over them, paint with anticorrosive, and throw on some white sand whilst wet. The back, if not seen, could be done with calico and tarred and sanded well. So much for the walls. Now, to secure ventilation and have a fixed roof. In making the back wall leave four openings at equal distances close to the apex, 27 inches or 30 inches in length, and 1 foot in width. These may either be closed by stout boards or a glazed frame of these dimensions. We have lately described several simple [illegible]des for opening or shutting these at pleasure. Now, the [illegible] being 6 feet, we would have 2 feet 9 inches of that of wall, and 3 feet 3 inches of glass; but, allowing for the wall-plate—say 2 feet 6 inches of wall. Now, if economy is an ob[illegible] the [illegible]nt glass may also all be fixed, and ventilated simil[illegible] [illegible]nes, secured in the wall below. Fewer would d[illegible] [illegible] bottom, if the door were left open in summ[illegible] [illegible] ventilators above the doorway and in the [illegible] house. We have said that ventilation would [illegible] with [illegible]y such openin[illegible] [illegible]ould [illegible] [illegible]

notice an account of rafter sash-bars. Youre for such a house will be 14 feet, a common length of battens, 9 inches by 3 inches, so that each batten will make four rafters, and these after being planed will be about 4½ and 1½. One inch thick would not be strong enough, and after a slip was fixed on would not allow enough of room for the glass, which must not be glazed tight. For each end you should have a rafter 3 inches by 4½ inches, all the rest 1½ inch by 4½ inches before planing, &c. The glass may be 18 inches or 20 inches in width. We would recommend the first distance from the centre of one rafter to another if the place is at all exposed. Now, to keep out frost from such a house, an iron stove or an Arnott's brick stove will be sufficient; but for ease and neatness a flue would be the best. The whole question of flues and materials for them have recently been discussed. Two bricks on edge would be sufficient for the depth of such a flue, the open inside being 6 inches or 7 inches wide. It might enter at the west end, and after passing the doorway pass round the front and out in the back wall at the other end. The stokehole at the end could be covered by a flap-board. If equally convenient we should prefer the stokehole to be behind the back wall at the south-west corner, and the flue could pass through inside the end of the house, but merely on the ground level until you passed the door and pathway, when it could stand all above ground and pass out at the back at the east end, or return along the back to a chimney near the furnace. See section.



- A Flue. Top on ground level or west end of the house, so as to allow pathway over it at doorway. The rest of the flue above the ground along the front and east end, and if deemed advisable returned along the back to the chimney over the furnace.
- B Dotted line to show fourteen-inch wall, or 18 inches to enclose chimney.
- C Dotted line at back, to show a shed if convenient. This will be best if roofed with glass, and besides keeping the furnace under cover, will be a good place for many plants and for working in. The heat from the furnace will pretty well keep out frost.
- D D Back and front ventilators.
- E Front platform from 2½ feet to 3 feet.
- F Stage at back. Many things at rest could be kept below the stage.

Three Vines might be planted in such a house, but they will shade plants in summer, but at that time a few tender annuals, &c., could be grown, as there will be plenty of flowers out of doors. With a shelf of from 2 feet to 3 feet wide in front, and a stage behind, the flue will not be seen at all. Such a house and especially with a shed behind, the roof partly or wholly of glass, would hold a great many plants and be productive of much pleasure. But, for the desire for a lean-to, we would have recommended a span-roof 7½ feet high at ridge, 5½ feet at front, and 12 feet wide, with path down the middle.—R. F.

TEMPERATURE OF VINERY.

Is a temperature of 43° too high in a vinery where there are also several plants? I was informed if more air was not admitted the Vines would be ruined.—Inquirer.

[Never mind what the wise people say. At that temperature 43°, the Vines are safer than if at 23° or 33°, and they wil sc[illegible]ely come a day bef[illegible] their time. You may keep them a[illegible] [illegible] winter from 38° [illegible] and do them no injury. and kee[illegible] [illegible]

	Highest Temp.			Lowest Temp.			Mean Max. Temp.			Mean Min. Temp.			Mean Temp.			Rain.		
	1859 deg.	1860 deg.	1861 deg.	1859 deg.	1860 deg.	1861 deg.	1859 deg.	1860 deg.	1861 deg.	1859 deg.	1860 deg.	1861 deg.	1859 deg.	1860 deg.	1861 deg.	1859 ins.	1860 ins.	1861 ins.
January	53	54	51	24	25	0	43	42·5	37	34	32·5	27	38·5	37·5	32	0·68	2·38	0·79
February	56	49	53	26	20	18	48	40·5	47	36	29·5	36	42	35	41·5	1·04	1·23	2·51
March	63	58	59	22	26	25	53	47	51	40	35	37	46·5	41	44	1·30	2·93	1·77
April	74	64	60	27	28	27	54	52	52·5	38	35·5	36	46	43·75	44·25	2·49	0 93	0·77
May	79	73	79	32	32	30	62	64	62	44	46	44·5	53	55	58·25	3 32	3·93	1·00
June	85	73	80	42	41	43	72	65·5	70·5	53	49	51.5	62·5	57·25	61	3·40	4·69	2·62
July	89	76	77	45	40	48	79	68·5	71·66	58	50·5	54 25	68·5	59·5	62·95	3·37	1·81	2·64
August	86	72	85	46	46	43	73	66 5	73·3	54	51·5	54·3	63·5	59	63·8	1·72	5·40	0·52
September	73	67	75	41	33	37	64	58·5	65·43	49	45·5	49·1	56·5	52	57 26	2·29	2·67	1·16
October	73	64	72	25	30	34	56	56	61·61	44	45	46·7	50	50·5	54·15	3·34	1·59	1·08
November	57	50	56	26	28	21	47	44	45·2	35	35	32·8	41	39·5	39	1·56	2·38	3·47
December	55	51	51	5	0—3	24	39	39	43·5	30	30	35	34·5	34·5	39·25	2·66	3·26	1·23

Highest Temperature of 1859 occurred on July 18th, 89°. Of 1860 on July 15th, 76°. Of 1861, on August 12th, 85°.

Lowest Temperature of 1859 occurred on December 18th, 5°. Of 1860, on December 24th, 0 —3°. Of 1861, on January 7th, 0°.

Mean Maximum Temperature of 1859, 57·5° Of 1860, 53·66°. Of 1861, 56·73°.

Mean Minimum Temperature of 1859, 43°. Of 1860, 40·41° Of 1861, 42°.

Mean Temperature of 1859, 50·25°. Of 1860, 47°. Of 1861, 49 37°.

Amount of Rain in 1859, 27·07 inches. In 1860, 33·20 inches. In 1861, 19·51 inches.

NOTES FROM MY HERBACEOUS GARDEN.

(Continued from page 277.)

I WILL proceed now to give in as concise a manner as possible the directions followed in supplying six more beds; but must curtail the information, as the subject is lengthening beyond what I first anticipated.

NOTES ON BEDS 6 AND 7.

No. 6 in autumn was filled with variegated Box, which was grown in pots plunged in the reserve garden for the purpose. An edging of Pansies was given here. The Box was removed again in March to make room for the scarlet Brompton Stocks. The Pansies will remain till the Stocks have done flowering.

No. 7 was filled with Irish Yews, and an edging of Pansies was added here. These, too, will remain till the purple Brompton Stocks, which are coming here at the same time as the scarlets, have done flowering.

The following is a short treatise on the way these Stocks were grown. Seed was sown the first week in June; the seedlings were pricked out into a piece of rich soil at the end of July, and at the end of September were taken up and replanted in the same soil. The object of this move was to arrest the vigorous growth, and cause them to become stout and stocky. Taken up again in November, they were placed singly in 48-sized pots, there to remain under the shelter of a roughly-constructed pit to the time of their being finally placed in their flowering-beds. I have never seen a better system of growing them. It is a simple method certainly, and their noble spikes of fragrant flowers amply repay for this additional trouble of removing. But March is fast closing upon us; the Stocks are still in their pots, but I will remove them at once to their flowering-quarters; but will first plunge the Box and Yews again in the reserve garden. The Pansies are flowering nicely, and, in conjunction with the surrounding spring bulbs, have a good effect. I anticipate a gorgeous display of flowers from these two beds of Stocks. I will not fail to assist them with good doses of manure water should dry weather set in. A week hence, and I will sow a large pan of German Asters, to take the place of the Stocks about the beginning of July. As soon as the Asters are up and large enough to prick out I will place about four of them round the rims of the pots from which the Stocks come; these can be turned out with the balls entire as soon as the Stocks have done flowering. No time will, therefore, be lost in this case, as the Asters will soon flower, and continue on till bad weather in autumn.

A good batch of cuttings has been taken from the Pansies, and the old plants taken away and committed to the rubbish-heap.

BEDS 8 AND 9.

The centres of these were filled in autumn with the common Lent Lilies. No. 8 had an edging of the American lilac Primrose; while No. 9 received an edging, for a permanency, of the little Phlox oculata. This Phlox, if not removed more than once in four years, will flower in the month of April and onwards through May in great profusion. It should receive annually a little sifted dry earth in the autumn strewn lightly over the plants, as the roots spreading naturally very shallow become bare and exposed through the continual heavy rains. Nothing more was done here till the April showers had warned me that the double purple and white Rockets, which are coming here to bestow their delicious fragrance, would remove now without fear of any check. The Lilies only will require moving now, so there is nothing to forbid the Rockets being brought here at once. The white Rockets will occupy No. 8 and the purple No. 9. Had it been considered necessary these would have been planted here in the autumn, as has been recommended for most other kinds of herbaceous plants; but they care so little about moving that I would not mind venturing to do so when they were in full flower, if I wanted immediate effect.

The double Rocket may be increased by division of the root at almost any season of the year; but a more speedy method of getting up a stock is the following:—Choose two or three strong plants, and as soon as these have thrown up flower-stalks to the height of a foot and a half cut them down to within 4 inches of the bottom. The stools will soon produce a number of side shoots, and when these shoots have attained the length of 3 inches slip them off with a heel; insert them under a hand-light in a mixture of leaf mould and sand, and in a few weeks they will be found to have made good roots. To those not practically acquainted with these plants I will here add that the purple in most situations grows a foot higher than the white, and is generally three weeks later in flowering—viz., the white in June and July, and the purple in July and August.

After the Rockets had ceased to flower in No. 8 they were removed again to the reserve-garden. I have already a substitute in readiness to take their place in the Lychnis chalcedonica, or double scarlet Lychnis. This, I think, must be a stranger to some of your readers, as it is but rarely to be met with. All who know the brilliant scarlet of the single Lychnis cannot but admire its glowing colour. If the double does not surpass the single in richness of hue, it certainly is not wanting in any other point, but might be placed as a fit companion for its single relative. Its removal here from the reserve garden will produce a slight check on its flowering: consequently it will furnish flowers later in autumn.

The following is a quick way of getting up a stock of the double Lychnis:—Place three or four plants in a light friable soil, and take out all flowering-stems for one season. This will cause a greater action to the roots, and a greater number of offsets will be the consequence. Divide these in early autumn, and, where practicable, place them where they are intended to flower.

Beds 10 and 11.

No. 10 received for the winter about a score of plants of the Berberis aquifolium. The beautiful yellow flowers of this hardy shrub in contrast with its dark glossy foliage in spring is truly grand, and in conjunction with No. 11, which was filled with the crimson Pæonies, had a very striking effect, notwithstanding that the former had nearly spent its flowers before the Pæonies were in their beauty. But I ought before to have remarked that No. 11 received in the autumn, to stand till the beginning of March, some well-grown plants of Red Cedars. On their removal the Pæonies took their place. The Berberis was removed the third week in May, which was late enough, to allow for Carnations and Picotees to flower the same season in the same bed; but then these were grown in 24-sized pots. This was compulsory; for we were so infested with hares and rabbits, that to put them out earlier would have endangered their lives. A few seeds of Ten-week Stocks were sown at the time of turning the above out in some of the bare spaces between the plants, Thus we insured a later succession of flowers than the Carnations would give us.

No. 11 was recruited at the same time. This was the first trial of removing the Pæonies immediately after flowering, and I have no further notes that would justify me to advise doing so, although, were I appealed to for my opinion upon the matter, I should give it in favour of removing. This much I can say in favour of clumping them—a more gorgeous spectacle never before greeted my eyes than this bed for the space of a month.

Cleanliness with respect to clearing off all loose petals and decayed flower-stalks is an essential point in their favour; and where order and neatness reign it will be attended to in this case daily. But like all other beautiful flowers, the time to cease flowering comes too soon, but not too soon for the coming successors, for they are already bursting their flower-heads. The Potentilla is the plant in question, of which we have purposely procured several varieties with the intention of testing their hardiness and long duration in flower. I can speak of them for both qualities with confidence, having grown a few in the mixed borders. They will be brought to this bed at once, lifted with good balls of earth, where I doubt not they will furnish a good display of flowers for the summer.

What followed the double Rockets in No. 9 must be omitted for want of sufficient notes.—J. C. Clarke, *Wakehurst Place, Cuckfield.*

Culture of the Osier Willow.—Having lately seen several inquiries respecting the Osier Willow and its culture, and being asked almost daily, "Do you think it will pay?" I have concluded to send you my experience in its cultivation. Three years ago this spring, after corn-planting, I set two acres of the French Osiers, placing them in rows 3 feet apart, at a distance of 1 foot from each other. The first year I cultivated and hoed the same as corn, and many of the shoots attained the height of [illegible] feet. The next spring I cut them, but, having no machine for [illegible]ing, lost the crop, except a few used for sets. Last spring I cut and commenced peeling by hand, which I found rather an [illegible] business, and almost resolved to abandon their culture; they must be peeled in that way. About this time a machine was invented for peeling Willows. I immediately procured one, which worked to my entire satisfaction, and with it finished peeling my crop, which when ready for market, including some sold for sets, a little exceeded a ton. These I shipped to a commission merchant in New York, and received for them 110 dols. per ton. This year I have a much heavier crop. For an experiment I have weighed those cut from twelve stools, which amount to 18 lbs. I have found in peeling and drying they waste nearly one-half. The produce of an acre stands thus:—14,520 stools per acre, 1½ lb. each, 21,780 lbs. Ready for market, 5½ tons, 110 dols. per ton, 605 dols.; cost of cutting, per acre, 6 dols.; cost of peeling, per ton, 7 dols., 38 dols.; binding and taking to market, 5 dols. per ton, 27 dols.; total, 72 dols. Deducting expenses, this leaves a profit per acre of 533 dols. According to directions received at the time I planted, I have not cultivated mine since the first year, but think they should be cultivated once every spring, to loosen the soil and keep them free from weeds and grass. I am confident that any one who has suitable ground, and will bestow proper cultivation, can realise this amount from an acre of Willows, perhaps more. After reading these facts I think no one can hesitate how to answer the query, "Will it pay?"—(*Rural New Yorker.*)

ENTOMOLOGICAL SOCIETY'S MEETING.

The first Meeting of the Entomological Society in the present year was held on the 6th January, the President, J. W. Douglas, Esq., being in the chair. The alterations intended to be proposed in the lists of the Council and Officers for the ensuing year were announced by the President, the chief change being the substitution of H. T. Stainton, Esq., as President, in lieu of Mr. Douglas, who retires from length of service; and Mr. Dunning as one of the Secretaries in the place of Mr. Ianson.

Mr. F. Smith exhibited the nest of a Bee of the genus Anthidium, from the Cape of Good Hope, collected by Mr. D'Urban, some of the cells in which were still stored with honey and pollen; but in other cells a parasitic kind of Wasp, belonging to the genus Leucospis (belonging to the family Chalcididæ), had been developed, which had destroyed the Bee-larvæ. He also exhibited several of the spines of a species of Acacia from the Cape, in the hollow portions of which several specimens of another kind of Bee, belonging to the genus Hylœus, had been developed, and which had made their escape by a hole bored near the tip of the spines. The eggs, pupæ, and perfect Bees were discovered within the spines when opened, the pupæ not enclosed in a cocoon, as is the case with the pupæ of most kinds of wild Bees (which habit is not, however, adopted by the Hylœus). Mr. Smith also mentioned that he had once found a piece of flint, in a hollow depression of which he had found more than twenty immature Hylœi, lying without any cocoon-like covering.

Dr. Knaggs exhibited a number of the curious cases (like those of Caddice Worms, only much larger in size), formed by the caterpillars of different gigantic species of Pysche, or Oiketicus, in New South Wales. One of these cases was several inches long, and its outer surface was defended by a number of pieces of twigs arranged longitudinally. (The Moth of this species had been described by Professor Westwood under the name of Oiketicus Saundersii, having been received by W. W. Saunders, Esq., Treasurer of the Horticultural and Linnean Societies, from Australia, where it was collected by Mr. Stephenson.) Other cases had the twigs arranged tranversely, but one of the most curious (of which the Moth has not yet been discovered) was entirely of a leathery texture and oval form, with strong longitudinal ribs of the same texture.

Mr. G. R. Waterhouse exhibited a new British species of Staphylinidæ, of small size, from the collection of Dr. Power.

Mr. F. Bond brought some slabs of pressed peat, which formed an excellent substitute for cork in lining the drawers of insect cabinets.

Mr. Dunning exhibited a photographic representation of a remarkable specimen of the Magpie Moth (Abraxus grossulariata), from the collection of Mr. Gregson, stating that the yellow colour of portions of the wings, generally so difficult to be treated in the photographic camera, had been neutralised in this instance by the employment of a piece of green glass placed between the insect and the lens. Mr. Dunning also read [illegible] varieties of insects, by feeding the caterpillars with different kinds of food plants. By a series of experiments extending over the last ten years, he had been able to obtain considerable modification in colour in a great number of species of Moths; by this means Mr. Gregson considers it possible to obtain a permanent series of varieties. This paper led to considerable discussion with reference to the question of local permanent varieties, as well as to the specific rank of many of the so-called species of Microlepidoptera, which have, of late years, been reared with so much success.

Mr. Stainton read descriptions of nine new exotic species of small Moths, belonging to the genus Gracillaria, from Moreton Bay, Australia, collected by Mr. Diggles, and from Calcutta by Mr. Atkinson. Some of the species were extremely beautiful; their habits were, however, precisely similar to those of our own country.

Mr. MacLachlan read a paper containing descriptions of a number of exotic, as well as of one new British species of Trichoptera, the latter had been at Shirebridge, Devonshire.

Mr. F. Smith read a note by Mr. Woodbury in opposition to the views of Principal Leitch (communicated to the Society at the October Meeting by Mr. Tegetmeier), on the development of queen Bees by the supposed action of heat engendered by the congregation on the outside of the queen cells of large numbers of Worker Bees (in opposition to the generally-received opinion that the development of the queen was owing to a special kind of food). Professor Westwood also opposed Mr. Leitch's views, considering that were heat the chief cause of the development of the fuller powers of the queen, the queen cells would always be found in the hottest part of the hive, instead of being placed along the outer margin of the combs; besides, it was necessary that the theory should be equally applicable to the development of the workers and queens of the Vespiary and Humble Bees, as well as to the two kinds of workers and queens of the Ants.

GENERALLY USEFUL CULTIVATORS.

COW MANAGEMENT.

(*Continued from page* 297.)

In my last we left off with the milking, supposing the cows are milked thoroughly clean; because, not only is the last half-pint of more value than the first quart, and gives the richness, colour, and firmness in good butter, but that quantity left in the cow's udder each time, or even occasionally, has a tendency to dry her, or reduce the quantity of milk.

Now, having arrived at the dairy with the milk, the milk-pans being ready, with a sieve in one of them, the milk must be strained through it, an equal quantity in each pan; then put sufficient clean water in the milk-pail to rinse it out, and, if more than one milk-pan, divide it equally—I believe it to have a beneficial effect. In cold weather I put warm water. Now, if the milk was taken to the dairy, and there left for the cook to put in the pans, in the morning probably she may have work to do that will prevent her attending to it immediately, or it may be forgotten; and in the afternoon, just as the milk is brought in, she is just about to dish up the dinner, and by the time the dinner is sent in, and she is cooled a little to venture into the dairy with the windows all open, the cream has formed on the milk, and not only is there a good part left on the milk-pail and strainer, but the cream never rises so well after, and, as a matter of course, "don't pay."

I may as well say a word or two respecting the management of the milk in the dairy. The other day a lady neighbour was speaking to our cook, and complaining about her butter, and amongst other remarks, she said, "I never get good butter." She saw and tasted the butter made here that day, as she had many times before, and she asked, "How do you manage your milk?" Now, there is no rule to be laid down that any one without judgment can follow; but it must be regulated according to circumstances. Our cook (and it is a rare occurrence for her to have anything the matter with her butter) takes the cream off the first time after standing twelve hours or so; and if the weather is hot or sultry, as in summer, or dull and muggy, as in November, she puts it into a clean milk-pan, and if she skims it more than twice (which she always does if the milk is not wanted), the third skimming she does not put in the cream-pan for butter, but makes use of it for pastry or melted butter. The cream must be well stirred up in the pan daily, and as we now only milk one cow and churn but twice in three weeks, it will require to be scalded and changed to a clean pan two or three times. She never scalds her milk, and only on such occasions the cream; but with all this precaution the butter may be spoiled by the feeding of the cows.

Where there is more than one cow kept, it is time one should be dried for calving. I manage to bring them in at least three months apart, and cease to milk eight weeks before calving, but do not cease milking all at once. The last week milk only once in the day—this milk will be good. Afterwards, take a little just to keep the udder from straining for the next week, and give the dry cow the tops and bottoms of the rick. If you have not one dry, put it by till you have, because you must take part of the responsibility if the butter is bad.

As in some instances you will have to churn, or assist in churning, I may as well say a few words on the subject here. Modes of churning have been advocated in this Journal, and some few years ago some one suggested the idea of having the churn attached to a steam engine: where the quantity was great, and the person superintending had command over the steam, there could be no objection. Another, or the same individual, could see no reason why churning could not be done in the nursery (placed inside the rocking-horse, I suppose). As a piece of amusement, no doubt it would answer admirably, particularly when it came to the making of the pats. But I am not sufficiently advanced in science to advocate either of the above. Still churning is not a mechanical operation only. It requires thought and judgment, and more scientific knowledge to describe the why and the wherefore than I am possessed of. In the summer, when the weather is warm, the cream must be often changed into a clean vessel and kept as cool as possible, and the churn filled with cold water the day before using it. It must be churned very slowly, and should never be churned under three quarters of an hour; otherwise, the butter will not get firm. The buttermilk must be well worked out of it with the hand. If the hand is at all inclined to be warm, she holds it in water as hot as she can bear it, and puts a cloth round it, else the butter will be streaky when it is cut, and will keep but a short time. After being made up and placed upon a clean dish, it should be placed on the coolest part of the dairy floor, and not in water, as some people do.

At this season of the year the cream should be brought on the kitchen table a night or two before churning, and the churn well warmed with water, and all the rinsing done with warm water, and then the churn brought into a warm room. Care must be taken, and not turn it (the barrel churn) too fast at the beginning, else the cream will be got into that state that is called "asleep," and will not move at all, and will remain so for hours. People are apt to put water in then to thin it, and the result is too often that it goes into the pig tub; but should it get into this state, put in a clean plated spoon, or something of the kind to separate it. The object is to get it to move. It is produced by fast churning: therefore, you must exercise your judgment, and prevent it at the beginning.—The Doctor's Boy.

TRANSPLANTING MODERATE-SIZED EVERGREEN SHRUBS AND TREES.

For the information of those whose intention it is to carry on transplanting operations during the present winter and spring, not being provided with the regular transplanting machinery, I beg to offer the following observations:—

The tree or shrub is first prepared by opening a trench all round, and at a sufficient distance from the stem to prevent cutting the roots with the spade. After getting down about 2 feet, take a small four or five-toothed tan-fork, and remove the earth gently from the ball, in order to save as many of the fibres as possible. While removing the soil, great care is requisite to keep the ball of earth as perpendicular as possible, even below what is intended to be the under surface, and on no account undermine until the ball is sufficiently bound up. Carry on the reducing of the ball in a perpendicular manner till within a foot and a half or 2 feet of the stem; this, however, must be judged according to the size of the plant, the matted nature of the ball of earth with the roots, or to the strength which can be commanded at the time of lifting. Where human exertion is to be the raising power, it is better to curtail the ball of earth, so as the strength at command will be sufficient to raise the mass without difficulty, or stressing the individuals, which is not unfrequently the case when too much is attempted; besides, the plant is apt to sustain injury by the loosening of the soil from the roots, whereas, if a smaller ball of earth were attempted, the risk of injuring to the plant is much less. Supposing the ball of earth reduced to the size required, the strong roots, if any, should be cut close to the surface of the ball, and the smaller or more flexible roots tied to the remaining mass. Round the ball of earth and roots place some soft straw or hay, and surround the whole with a mat, previously doubled longways, keeping the doubled portion lowermost, but not below the level of that part of the ball intended to be the bottom; this, however, must be judged according to the depth the roots are found. Sometimes the ball will be found to bear a much greater proportion of depth than breadth, but more frequently the reverse. After adjusting the mat properly, tie round it loosely, within 6 inches of the top, and 6 inches of the bottom, a piece of untarred yarn or packthread, and then place between the yarn and mat a sufficient number of pieces of thin boarding, each varying from 2 inches to 3 inches broad, of equal lengths, and from 3 inches to 4 inches apart all round the ball, keeping the yarn of sufficient tightness to adjust them properly, and at the same time to prevent their falling down. The most convenient wood for the purpose is barrel staves, keeping the concave side next the ball. After the spars or staves have been properly arranged, a strong half-inch tarred rope doubled must be put round the upper part of the ball, making it fast in front, but not too tight, take the remaining portion of the doubled rope down the front, as in *fig.* 1, and surround the ball with it again near the bottom, afterwards twist the ends of the rope several times round the lower double each way, so as to fix it without having recourse to knotting, which must always be avoided. After the ropes have been adjusted of moderate tightness, place under the rope at each side of the ball a small piece of packthread or tarred yarn, about 12 inches or 14 inches long, one on the upper, and the other on the under rope. Wrack sticks must be used both on the top and bottom ropes, and on each side, then wrack both up gently, and at the same time twisting up the ropes to a sufficient tightness, then tie the ends of the wrack-pin down with the piece of short rope yarn previously put in.

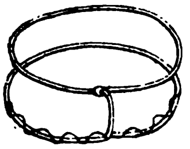


Fig. 1.

The method just described is quite sufficient for ordinary-sized balls, but if the mass is large, it is necessary to use large ropes, and two wracks upon each rope.

Supposing now that the ball is firmly bound together, begin to undermine on one side; but, before doing so, it is necessary at this stage of the operation to consider which way the plant (tree or shrub) can be easiest taken out from the shrubbery in which we shall suppose it to be growing. If egress is easiest afforded on the south side, the undermining must take place on the east and west sides. While undermining the one side, it is necessary to put a prop between the ball and the bank on the opposite side, so as to prevent the possibility of the ball slipping down, until the undermining is completed. If the ball is solid, much of the earth below not containing roots can be removed with propriety; but if loose, it is requisite to put a little straw or soft mat pad, and then insert a strong board varying from 6 inches to 8 inches in breadth, and of such a length as to project beyond the ball at each end about 2 inches. When the one side is finished, remove the prop and allow the ball to lean gently down on the lifting-board just put in; remove now the loose soil from the opposite side, and place below a little straw or soft mat pad, and a corresponding lifting-board to that used on the opposite side. This operation completed, the plant will rest wholly on the lifting-boards. The next process is to remove the loose soil from under the ends of the boards on one side. Two strong tarred ropes, each 10 feet or 12 feet long, being in readiness, one is worked under the ends of the boards at one side, and the other under the opposite ends. Another way is to put them in at the time the bottom boards are being placed. The ropes should be worked under the boards about one-fourth from each end, dividing the rope as near as possible. *Fig* 2, [illegible] represents the lifting-boards with the ropes under; *b* represents the boards and ropes with handspikes attached. If the plant [illegible] not of large size, the tying of the ends of the ropes together [illegible] be sufficient, but it not unfrequently happens that the rope [illegible] together [illegible] the handspikes, unless some contrivance is used [illegible] *fig.* 2, *c*, or pieces attached to the bottom of the boards to keep the ropes from moving, as on *fig.* 2, *d d*, are useful enough. It often happens that the lifting-boards must be sacrificed, as shall afterwards be explained: it is, therefore, needless to go to expense with them. To prevent the ropes getting together, it is necessary to fix a loop at the extremity of each rope, taking care that they shall be all the same height above the level of the ball, and so made as not to slip, and at the same time to be easily unfastened. Into the eyes formed on the ropes place strong handspikes parallel with the bottom boards, 7 feet or 8 feet long, according to the mass to be lifted.

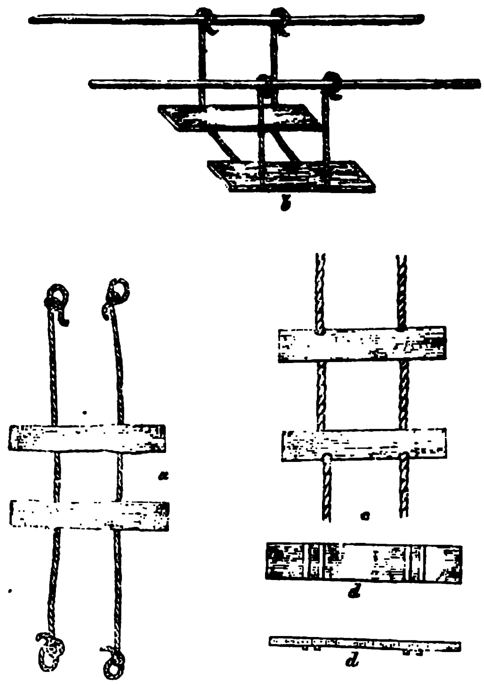


Fig. 2.

After the above arrangements are completed, sufficient strength must be got to raise it. As the most difficult part of the operation is the removing the mass from the hole in which it has been growing, and not being provided with a regular transplanting machine. In ordinary cases, the plant, if prepared as before described, may be easily lifted and conveyed away; but if too large to be raised at once, the task becomes more difficult. Various methods may be suggested for getting the plant out—one, by cutting a sloping bank from the surface of the ground to the bottom of the hole, and working the plant gradually up the slope. With heavy plants, this method is preferable to lifting it at once, which is apt to stress the men employed; besides, the difficulty of getting the handspikes low enough so as to have sufficient purchase when the lower part of the ball becomes near the surface of the hole. The following is the method which I generally adopt when the mass is large, and which prevents the possibility of any of the hands sustaining injury:—While the plant is still resting on the bottom of the hole, with the necessary ropes and handspikes appended, at one side place a few men to keep the handspikes tight, so as to prevent the ropes from slipping through with the extra strength placed on the opposite side for the purpose of lifting that side; when raised, fill up the side lifted with earth about 6 inches or 8 inches, and firm it well down, putting it as far below the plant as it can well be got. This being done, place the smaller strength on the side lifted, and the greater on the opposite, so as to raise it up also, and fill in below as before; carry on in this manner, gaining about 6 inches each time, until the plant is brought to the surface of the ground. This done, spread out a large bast mat, strong and quite entire, having all the ends tied as short as possible, place the plant on the centre of it, and tie the ends up to the handspikes on to the ball as tight as possible, so as to prevent the possibility of the loose earth from the bottom dropping out [illegible] destination [illegible] placing it on a machine for the same purpose. As the mat has to be drawn from below before planting, great inconvenience is occasioned if it is in holes, or has loose ends hanging down, catching on the ends of the lifting-boards and spars. Trifling as this observation may appear, it is of the utmost consequence while carrying on the work. Supposing the plant fairly out of the hole, and mat fixed under it. If the distance is short to the intended place of reception, it could easily be carried. (*Fig.* 3 represents a plant prepared for being carried, but without the mat surrounding all. It was left out in *figs.* 3 and 5 in order to show the position of the ropes and staves). If the plant has to be conveyed to a distance, it is necessary to be provided with a low broad-wheeled transplanting-truck, *fig.* 4.

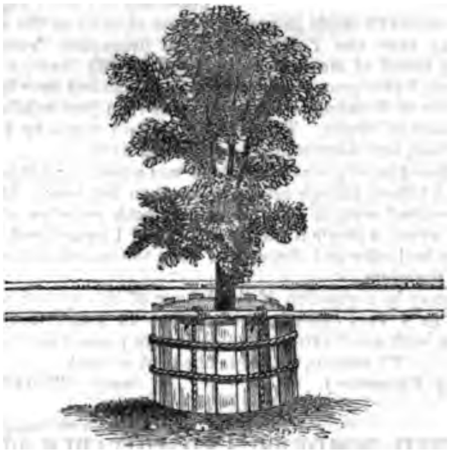


Fig. 3.

The surface of the truck must be strong, and made to extend a little over the wheels on each side. Such a machine as that used by masons for carrying large stones from place to place is preferable, owing to the ease by which it can be made to turn. The wheels had better be of solid woodwork, not less than 5 inches broad, and surrounded with a broad iron hoop, thus rendering it less liable to injure garden walks. Several strong rings should also be placed about it, in order to secure the plant by ropes if required, particularly while going over an irregular surface.

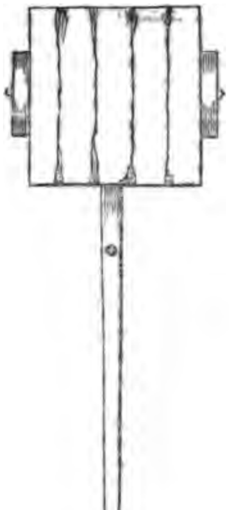


Fig. 4.

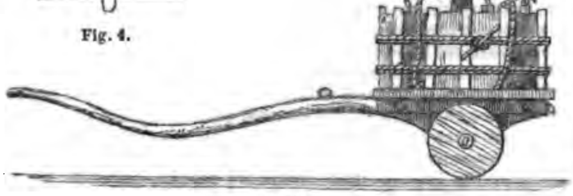


Fig. 5.

Supposing the plant brought to a situation where it can be easily got upon the machine, the handle must be raised up so as to make the back part of it touch the ground; the plant is then to be raised on, and the handle or shaft gradually lowered, keeping sufficient strength behind to prevent the plant being upset while bringing it to a level. *Fig.* 5 represents a plant so placed on the truck. After being secured, the handspikes may be taken out, and the ends of the ropes firmly secured to the upright staves or spars.

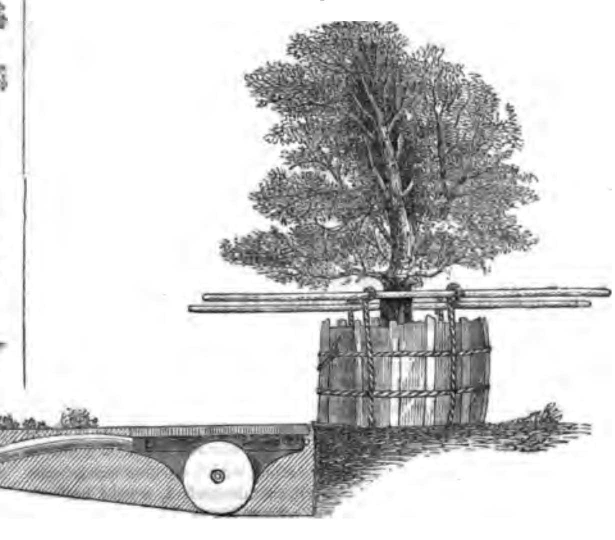
After being properly secured, little difficulty will be found in transplanting it to its intended place of reception. Previous to its being removed, the hole or pit into which it is to be placed ought to be in readiness, and at least 4 feet larger than the diameter of the ball of earth and roots to be placed into it. A sloping bank must be formed from the surface of the ground to the bottom of the pit, the machine with the plant must then be brought as near to the edge of the slope as possible, and placed with the back part of it to the pit. After the ties have been unloosed which fixed the plant to the machine, replace the handspikes and equally adjust the strength as before, placing one or two men to steady the top of the plant. All being in readiness, raise up gently the shaft of the machine, and the mass will be easily slipped to the ground. This done, unloose the ties of the outer mat, and raise the plant with the handspikes sufficient to draw the mat from beneath; then slip the plant gently down the inclined plane into the pit. If possible, prevent it from being dragged down, as it is apt to take in a quantity of earth, besides displacing the bottom boards, and the risk of loosening the whole mass.

If the ball of earth enclosing the roots happen to be too heavy to be lifted upon the transplanting-truck at once, it may be put on in the following manner:—After the plant has been raised, and resting on the surface of the ground, a slope can be cut in the earth close to where the plant is standing, sufficiently wide to allow the transplanting-truck to be let down on planks previously laid for the purpose, and of such a depth behind, that the back part of the truck shall be on a level with the surface on which the plant is standing. When so arranged, the plant can be worked upon the truck, and then drawn to the surface of the ground.

Fig. 6 represents a plant ready to be placed on a truck.

If the tree or shrub intended to be transplanted happen to be growing on a sloping bank, it is easily got upon the truck by cutting a trench into the bank where the plant is standing; and if its destination happen to be on a sloping bank, a trench can be cut so as to allow the truck to be run back; the plant can then be slipped off the truck on a piece of ground previously prepared for its reception.—James M'Nab, *Curator of the Royal Botanic Garden, Edinburgh.*

Fig. 6.



EXPERIMENTS IN CULTIVATING THE POTATO AT MOUNT SHANNON,

BY MR. ROBINSON.

The Potato crop was planted in drills, and in these the experiments were made. The planting was perfectly uniform; the soil, the time, the site, the seed, and the preparation all alike. The seed, which was cut in the ordinary manner, comprised two kinds, Scotch Downs and Leather Coats. The entire quantity of land planted with the esculent was four Irish or six statute acres.

The planting took place after the 10th of April.

On the 20th of July, about nine o'clock, P.M., whilst passing Peafield, near Anacotty, Mr. Robinson perceived, by the peculiar odour, that the blight was even then an unwelcome visitor; and on the following Monday, after examination, found that the plantings under his own care were affected. It was necessary, therefore, that something should be done to try and arrest the progress of the malady; and on the ensuing Friday he instituted the experiment.

He resorted to two expedients. He had a small section of land occupied by seedling Potatoes, and on the 26th of July he had the haulm or stalks of these laid—that is, bent down, with the foliage drooping into the furrows; and on the following Monday, the 28th of July, he had the greater portion of the general crop treated in a similar manner. A man or boy took and turned two or three stalks at a time, laying them with the foliage pendent as stated, and then a good spit of earth having been dug between every two of the drills, a sufficient quantity was carefully laid on the off side, not quite on the top, of each drill, so as partly to cover and keep the haulm down. The greatest portion of it affected by blight, as well as the foliage, was thus bent down, and in such a way that both could be washed with rain into the furrow, in place of remaining in an upright position, in which the vitiated or poisonous matter would freely descend and taint the tubers. Of the six statute acres two were thus laid; a half acre next them left standing as it grew; half a rood of the drills parallel with the former cut down with a reaping-hook, and covered over with soil from the furrow, so as to rise over the naked stems; one other acre then laid like the two first; and, lastly, one rood, or rather more, of the drills left upright like the half acre already mentioned. Thus there were such alternations of the several processes in various parts of the field that no special advantage could vitiate the truth of the experiments. We come to the results.

A tape was taken, and 7 yards or 21 feet of two laid drills measured; a similar length of two drills alongside the former, in which the stalks were left standing, measured in like manner; and an equivalent length of a couple of drills, in which the stalks had been cut, marked out in the same way. In two other portions of the field the like measurement was made; so that the trials were allocated to the lower, the middle, and the upper parts of the land. All those measured lengths were fairly dug out, and the produce exposed just as it was turned up. The Potatoes were counted, examined, and weighed in the presence of the gentlemen who were present, and the result ascertained to be, that five times a greater quantity of bad Potatoes were found in the drills that had grown in the upright or the usual way, than were found in those which had been turned down with the foliage pendent into the furrows. We saw the tainted tubers counted in the drills, in which the stalks were left upright, and the number in the 21 feet was one hundred and twenty-one; whilst in the like space of the two contiguous drills, of which the stalks were laid down and earthed in the manner directed by Mr. Robinson, the number of bad tubers was only nineteen. In the second trial, according to weight, there were 18½ lbs. bad, or nearly a stone out of the produce, of four stone in the unlaid drills; whereas there were only 2½ lbs. bad out of a similar quantity dug from the two parallel drills that were laid. Thus, in every 20 feet of the latter, 11 lbs. of Potatoes were obviously saved; and any of our readers who will take the rouble to calculate the collective quantity which would be ielded and saved from a single acre at this rate will asce[illegible] he money's worth of the perfectly easy and practical experin[illegible] ried and proved by Mr. Robinson. How enormous to [illegible] country such a saving must be will be admitted by all w[illegible] [illegible] roachable worth of the Potato crop as a sta[illegible] [illegible] ple, and of the live stoc[illegible] [illegible] agriculturists rea[illegible] [illegible] lown the drill[illegible] would be f[illegible] [illegible] engaged. To occupiers having hands and legs of their own, of course the expense would be infinitely less. The effect of the earthing over the laid drills was, as you could observe at a glance, highly beneficial to the land itself, for it had stifled the weeds in their infancy, whilst the unlaid drills were nearly overspread with the growth.—(*Munster News.*)

THE POTATO DISEASE.

"*Castlemartyr*, Nov. 18, 1861.

"I OBSERVED lately in your paper an allusion to the system of earthing over the Potato-stalks, as protection from blight. Having heard of its success on Lord Clare's farm, at Mount Shannon, I this year caused a drill to be earthed over in each of two plots of Potatoes. Each plot was then just exhibiting the first spots of blight. The stalks were laid down by the hand, not cut off, and were completely earthed over.

"When the crop was lifted there was a considerable portion of diseased tubers, though certainly less than last year. But in the drills earthed over, in both plots, and both varieties of Potato, there was not a single diseased tuber, and I considered the produce to be better and drier than even the sound tubers of the rest of the plots.

"It may be a question if the labour of this system would be repaid in a very extensive crop; but to small farmers and cottiers, with small extent, I think it may prove valuable.

"I remain, sir, your obedient servant,
—(*Cork Examiner.*) "SHANNON."

STRIPED BORDERS, AND SUITABLE PLANTS TO MAKE THEM WITH.

A CORRESPONDENT, in a former Number of THE JOURNAL OF HORTICULTURE, having invited planters to make a report on what they considered was the best bed of the season in their respective gardens—a request which I hope will be duly responded to, and one which I myself will have great pleasure in giving my views upon on another occasion; but in addition to the inquiry after the best beds of the season, I also put forth another inquiry: Which are the best plants to make a striped border of four rows—all facing one way? In asking this through the columns of this periodical, I will at the same time give some examples which I have tried here; but as none of them were to my mind perfect, it is only right to point out what I consider the defective features of them, in order that those who may in future be disposed to form such borders may fully comprehend the merits and failings of such plants as have been tried. I will also make a few remarks on what I consider a plant for a striped bed ought to be.

At what precise time beds or borders of flowers planted in continuous stripes came into fashion it is impossible to say; but the first that I ever saw, and which, in richness of colouring, has not been surpassed by anything I have seen since, was of Crocus, and that some thirty years ago or more, the custom then not being a new one. Of late years, however, it has been a common practice to dignify old customs with new names, and the term rainbow-border or ribbon-border, has been thought to sound more refined than plain striped border. Be this, however, as it may, it is enough for the reader to understand that such borders form a very important feature in most flower gardens now-a-days, and the proper planting of them is one that requires as much taste and judgment as anything in the floral department, that where successful hits have been made, I hope the fortunate ones will not hide their light, but at once expose it to the world; for it is possible the best arrangement yet made may have been at some obscure place which the mass of the gardening world would have but little chance of hearing of, excepting through the columns of a periodical like THE JOURNAL OF HORTICULTURE. But as certain conditions seem requisite in a plant to make it suitable for this class of ornamental gardening, it is only fair to point out what I consider these qualifications to be.

The Necessary Qualifications of a Plant for a Ribbon-border.—Many of the best bedding plants we possess are unfit for this purpose, or at least for the generality of cases, when the lines of colouring are less than 18 inches wide. Verbena of most kinds are too rampant, loose, or spreading, so that it is only the upright growers which are fit, as for instance, Verbena Purple King, one of the best, if not the very best, of all the Verbenas. There are some other Verbenas of similar habit, but I instance this one as being well known. Plants [illegible] pendulous flowers are also unfit, and [illegible] plants as do not [illegible] the [illegible] of habit necessary to carry them through the whole of the season with a respectable appearance, ought also to be disqualified. This will exclude most annuals. Plants of unruly growth must also be denied here, unless such growth can be constrained to take that proper form which it ought to take in the company it is in. Some other classes of plants are also unfit for this work. But enough has been said on this head: it is therefore better to consider what descriptions of plants are best adapted, and the reasons why they are so.

In the first place it is right to say that, notwithstanding the long-continued blooming of many of the most popular plants our gardens now boast of, the plant of all perennials at least outlives the flower, often by several weeks. Whenever, therefore, we can have an ornamental plant, it is better than an ornamental flower, for the latter is never produced in such profusion as the foliage, and is not liable to those fluctuations which the ever-changing character of our climate renders so certain: therefore for most purposes a plant with foliage of the required colour is preferable to one having flowers of that tint. Unfortunately, however, we cannot have all the colours we require in leaves only: hence the necessity of using flowers when wanted. At the same time, by a judicious arrangement of the different coloured foliaged plants, a good effect may be produced, which is retained after the rains of October have destroyed all bloom on the plants having more claim to floral distinction. So much importance do I attach to this, that I regard the Perilla nankinensis as the most important addition made to our flower gardens in the last ten years—as it furnishes a colour but indifferently represented in any flower, excepting Verbena, and in that, as has been said before, its duration is not to be depended on in dry seasons and situations. To the flower gardener patronising the striped or ribbon style of planting, the Perilla and such plants as present a clear distinct colouring, are of the utmost importance; and additions to our stock of such plants will be heartily welcomed, more especially if new colours in that way can be had. The following list of plants which have been used that way here may perhaps be of service to the general reader, to which I append such note as is necessary to make them understood; at the same time, I shall be glad to have what additions others may make to the list, as the one given is far from complete.

Alyssum variegatum.—This is, perhaps, the most useful white plant we have, its numerous blossoms being as white as the plant itself, and improving rather than deteriorating its general effect. Usually it is planted as an edging, but this need not always be so, for in point of height it keeps pace with Lobelia, many of the Verbenas, and the dwarfer class of Geraniums. Here we use it for what I would call the stringwork, or embroidery of very large beds, when its uniform growth, requiring no trimming, fits it particularly for such work as cutting up large masses of colour into fanciful patterns in the way we have used it for several years, and for striped borders it is second to no plant that I am acquainted with for general utility.

Arabis variegata.—Dwarf and compact. The foliage being of a creamy yellow, rather than white, yet very beautiful, and being low growing, as hardy as a Daisy, and not particular as to situation, it is valuable as an edging; its appearance in winter as well as in the floral season being good, cheerful, and neat. I believe we have more edgings of this plant than of any other, not even excluding Box.

Ageratum mexicanum nanum, or some of its varieties, which however differ so little, that I include them all under one name, is well adapted for a striped border, as supplying a colour not obtained in anything else. Some judgment is, however, required to place it properly as to light, as it generally overtops Geraniums, Calceolarias, and such like plants; but it is not the less useful on that account, as tall plants are often wanted as well as dwarf ones: it may therefore be pronounced good.

Cerastium tomentosum.—This seems so well known, and so generally patronised, as to require no further recommendation; and, as a dwarf plant, it approaches nearer to a pure white than anything else I know of; and being of easy culture, hardy, and possessing the property of adapting itself to any situation, it is one of the most popular edging plants of the day.

Variegated Mint or Balm.—I must confess never being partial to this plant, even when our lists of such things were more limited than they are now. It requires more trimming than can always be afforded, and after the middle of August has a dirty grey look. I therefore only mention its name, but recommend something else in its stead, excepting perhaps in such places as nothing else will thrive in.

Cineraria maritima.—Some edgings of this are, at the time I write (the middle of October) the most beautiful things in the garden; and nothing can well exceed its appearance when it really is good, but it is not the most convenient plant to deal with; it is very difficult to have it good in July, and also in October. The propensity it has to flower, in spite of repeated cutting, is such as to give what remaining foliage there may be left a rather sickly unpleasant appearance; this is often the case when old plants are used, and sometimes plants die under the ordeal of stopping, making an unsightly gap. Nevertheless, with spring-struck plants an excellent edging is produced, richer-looking, in respect to the graceful form of its leaves, than that of any similar plant I know of, standing out like portions of frosted silver, contrasting well with turf, or any other herbage it may be in contact with, and in a ribbon-border must look well.

Cineraria amelloides.—Compared with the last-named, this is vastly inferior, but as a compact-growing plant, with a healthy, agreeable foliage, and blue flowers, produced in continuous succession, it is often thought worthy of a place. True, its flowers are never very numerous, that for ordinary bedding purposes it has in most cases succumbed to the Verbena; but it may occasionally be grown in the striped border with good effect, its compact habit giving it a claim to distinction which Verbenas do not possess when not in flower.

Cuphea strigulosa.—Excepting as a neutral colour this is thought not to be distinct enough for the striped border, otherwise the plant seems well enough adapted that way. I have, however, never used it as such, and fear its claim to honour cannot be regarded at more than "second class."

Chrysanthemum regale flore pleno.—A double yellow Chrysanthemum, resembling in foliage some of the annual Chrysanthemums, but it is a perennial, and kept through the winter by cuttings. It is a strong grower, and flowers more abundantly perhaps than any plant I know of; certainly no Geranium, Calceolaria or Verbena furnishes so early and so continuous a supply of bloom, and there is no fear of the plants dying. There were expanded blossom early in June; and at the present time (the middle of October) it presents a tolerable good show, and doubtless would have done more so, if the dead flowers had been picked off; while in the middle part of the season, no Calceolaria presented such a dense mass of yellow blossom. The plant, however, is tall, quite 2½ feet or more, that it cannot well become a substitute for that popular flower, but it is possible a dwarfer variety may be found which hereafter may equal the Calceolaria in general utility, and possess the additional qualification of not being affected by the dry weather, which detracts so much from the general merits of the Calceolaria.

Calceolaria, yellow.— It is not necessary here to mention specific names, as new varieties are frequently offering themselves; suffice it to say that C. salviæfolia is the tallest and C. aurea floribunda the dwarfest yellows that I cultivate. The convenient habit of C. amplexicaulis renders it capable of being either dwarf or tall; but somehow I do not admire it much as a plant for a striped border, though excellent in a bed, that I have advised the more shrubby kinds to be used; and both the kinds mentioned, as well as some others, are useful that way when dry weather does not check that growth and formation of flower-buds, so essential to a continuous blooming: this, unfortunately, was the case in 1858, 1859, and again, to a certain extent, this year. Still we cannot do without Calceolarias; and if the dry weather in August and early part of September had not checked their growth, I believe they would have been as gay up to the present moment as at any period during the year. Calceolarias may, therefore, be regarded as entitled to a prominent place in the list of plants suitable for striped borders.

Calceolarias, Dark or Intermediate.—These do not come out so well as the yellow ones do: therefore I cannot recommend them. Calceolaria Prince of Orange blooms abundantly, but its colour is too much of a neutral to tell in a striped border; and the other dark kinds too often present so many blank weeks before flowering and afterwards, that this class can only reckon on the second list of suitable ones.

Geraniums, Plain-leaved Varieties.—The compact habit of most of these renders them very suitable for this work; and as the list includes both tall and dwarf, as well as several colours, many attempts have been made to produce striped borders of Geraniums alone, and one of two such borders here are amongst the most successful ones of the season. But one or two remarks seem necessary before describing Geraniums—it is to warn planters against using such kinds as have red or purple markings on the leaves. Many growers regard the fancy appearance these kinds present as a qualification of no ordinary merit; but they look better as potted plants than in a bed, therefore I give the preference to a plain green-leaved variety. A good dark horseshoe marking is not amiss when the plant in other respects is all that is wanted, but it is no better than a plain-leaved one; and more colours than black and green on a leaf only confuse each other, and look dirty and unhealthy.

Such kinds as Geranium Punch, Trentham Rose, Tom Thumb, Christina, and others look better than Compactum, Scarlet Globe, Cerise Unique, and others having more or less markings on the leaf, I advise the plain-leaved ones to be selected when convenient to do so; and as this section embraces many colours, habit of plant must be consulted as well as tint. I would certainly not advise many white-flowered ones to be planted, as the best of that class fall short of the variegated ones in giving effect that way. The pink kinds, as Christina and others, are, however, indispensable; but I am far from satisfied with Purple Nosegay, and hope ere long to see it displaced by one of better habit. As it is, Geranium lucidum is certainly as good as Purple Nosegay, being more dwarf, and, though its flowers may offend the florist, their numbers compensate the flower gardener.

Geraniums, Variegated White.—Of all the plants adapted for the striped border the silver-edged Geraniums are the most useful; for, whether in flower or not, their white foliage contrasts so well with adjoining plants that they are invariably favourites. For this purpose I prefer such plants as are of uniform habit, rather upright than spreading, and with leaves that are somewhat cuppy rather than flat, as that shows the edge or white part uppermost; and, looking at them in an almost horizontal direction, this qualification is of much consequence. Geranium Bijou is about the best I have in this way of the scarlet-flowered class; but Geranium Shottisham Pet as a deep rose is quite as good—nay, even better in its foliage. Flower of the Day is also good; but Brilliant, although, perhaps, the most abundant-blooming Geranium we have, is not a good variegated one; but there are several varieties, and every year is adding to the number. Geranium Alma is as popular as most Scarlets, and as a pink Silver Queen or Annie is also good; but as foliage is of more consequence than flower it is only to that public attention is directed. Mangles' Variegated, the best pink of all for a bed, is too rambling for a single line or stripe, although for breadths of 2 feet or more it is very suitable.

Geraniums, Variegated Yellow.—Nothing can exceed the Golden Chain in this way. Golden Circle is stronger-growing; but, like the Golden Chain, it loses many of its leaves in September. I think this class is capable of much improvement, and, doubtless, it will receive it in due time. As an edging plant, Geranium Golden Chain maintains a sort of regal claim to distinction, which is never denied it, the only difficulty is to get the necessary quantity of it. Taking up and preserving the old plants and propagating from them in spring is the only way.

Geraniums of the Oak-leaved Class.—Shrubland Pet flowers well in a vase, and in a bed of poor soil, and its pretty green foliage looks not amiss without flowers when it is in contrast with other things of a white, yellow, or variegated character; but to those who look for bloom only, I fear it will not be satisfactory, as the flower-stems are short, and when the ground is rich it hardly stands out bold enough to please the fastidious. But with an Alyssum on one side of it and Perilla on the other, it looks very well.

Dahlia.—Somehow I have never had a good scarlet, white, or yellow, in the dwarf class, although I am aware such kinds exist, there being a good scarlet at the Crystal Palace, but the yellow there is evidently too tall. The best white I have seen this year was in Lincolnshire, and I think was called alba multiflora nana. The old Purple Zelinda I have had since 1846, and in point of habit it has not been excelled, and I think not equalled. For a central row of the proper height the Dahlia is useful and good; but I think the Dwarf Purple will succumb to Perilla, as in dry seasons there is such a long period with very few flowers, while the Perilla is ornamental at all times.

Fuchsia.—Hedges or lines of Fuchsia Ricartoni are much [illegible], but they are not the class of plants that look well in the distance, the flowers being pendant; it is, however, of sturdy growth, and in front of shrubs forms an excellent background for other th[illegible] [illegible] white kind that I am aware of possesses [illegible] [illegible] Ricartoni, but for the striped border the Fuchsia cannot be said to rank in the front class.

Salvia fulgens and splendens.—The first-named is a useful plant for a back row, and being about the same height as Perilla, might stand behind it. Salvia splendens only succeeds in fine seasons, and is late in coming into flower, that for general purposes it is not advisable. The variegated form of Salvia fulgens may do very well for a bed, but it is not variegated sufficiently for the foliage to look well without flowers, and as it is, does not look so well as the plain green.

Vinca elegans.—This is a beautifully variegated plant, but better adapted for hanging over the edges of large rustic vases or baskets than keeping in order in the straight line of a striped border; but it may there be trained to order pretty well, and it looks very well, and, being hardy, is a useful plant.

Variegated Grass.—A friend furnished me with a pretty white-leaved Grass from near Liverpool, which makes a pretty good edging. It is, I think, a white form of one of our field Grasses, the seed resembling the crested Dog's-tail Grass. As a low-edging plant it is worth growing, differing widely from the old Ribbon Grass of former days.

Pinks.—An edging of double white Pinks looks remarkably well around a clump of shrubs, or as an edging facing the turf, and the plant being healthy and tidy looking, it is ornamental at all times; is is, however, hardly suitable for striped borders.

Lobelia.—A good variety of Lobelia speciosa is invaluable everywhere, and there are some pale-coloured kinds also useful; the class of blues, with flower-spikes pointing upwards, are the only kinds worth growing for the striped border, prostrate ones not showing the flower so well; but as a plant furnishing a continuous bloom the Lobelia is second to none, and I place it amongst the first class for the purposes here treated on.

Linum flavum.—When in flower this looks well, but it continues only a limited time in that condition, so that I cannot recommend it further than as a plant deserving of notice amongst hardy herbaceous ones.

Perilla nankinensis.—As before stated, I have no hesitation in pronouncing this ornamental plant the greatest acquisition made to the flower garden in the last half dozen years; for, added to a graceful growth and a deep rich bronze-coloured foliage, it is also of that convenient size which may be regarded either tall or dwarf, bearing stopping well. Its services commence in the early part of June, and it looks well up to the time of sharp frost. For the striped border single rows will be sufficient, as its deep rich hue seems to be too powerful when used too freely. As a boundary line of distinction it can hardly be planted in a wrong place, looking well everywhere. If only three species are wanted for a ribbon-border, one of them must be Perilla.

Several other plants are occasionally used in the way here treated of. The double white Feverfew looks well for a time, as also does Prince's Feather, Dielytra spectabilis, and Aubrietia purpurea. Isotoma axillaris is also used with better effect; but a little practice will enable the inexperienced to know which to reject; and the number of really useful ones is much less than may be supposed. Nevertheless, if any one has any addition to make to the above, I shall be happy to hear of them; and the readers of THE JOURNAL OF HORTICULTURE will also be interested in a matter which is yearly rising into more and more repute. At the same time remember that the qualification for distinction in the striped border is prolonged durability; without this plants are not admissable for this purpose.—J. ROBSON.

(*To be continued.*)

THE PRESERVATION OF ICE IN STACKS.

I WILL give you my own experience on this matter, having assisted to fill ice-houses of different shapes and in different localities, all erected in the usual style. They do not keep the ice so long as it keeps in the stack. The ground for a stack should be elevated, and in form like a terrace, so that the drainage would be natural. The first cartload should be placed in the centre, and broken small with mallets made for the purpose. They can drive the cart to the side of the stack, and break the ice, and then throw it up on the mass, where it must be broken, if possible, as fine as snow. The large lumps will work down on the sides, and must be thrown up again until the whole is one mass of solid ice, &c., in the form of a sugarloaf. Ninety-six cartloads will make a [illegible] stack; and when done as above directed, should be [illegible] fully covered with dry fern to the depth of 2 feet; then thatched with straw another foot thick. This stack will keep the ice well more than twelve months. When the ice is wanted the stack should be opened on the north side, and the hole filled up again with dry fern and straw.

I have assisted to make a similar stack; the garden engine being at work the whole of the time, until the mass of ice is congealed like a crystal. This will keep well, but not longer than the other way.

I have seen snow-stacks made. These are easily formed, and are useful when we have mild winters. When the snow begins to give, the men should commence rolling until the weight of the mass is heavy to move. They should then make a hole through the centre of the ball, and place a strong pole for an axle, and again commence rolling to save distance of carting. Fifty loads will soon be rolled in this way, and all should be in balls before beginning carting. The stack should be in the form of a cone, and thatched like the stack of ice.

Fern should be used as a cover, because it is a nonconductor of heat, and is the best material for purposes where a uniform temperature is required. Dry bog turf will answer the purpose nearly equally as well, where easily procured; but should also be thatched with straw. Straw will do when neither fern nor bog turf can be procured, but must be double the thickness.—G. Hill.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Cabbage, fill up any vacancies in the autumn plantations; also, make fresh plantations of the autumn sowing if necessary. *Cauliflowers*, those under hand-glasses and in frames must be fully exposed during the present mild weather, or they will button off in the spring. Sow seed on a south border to produce plants to succeed the autumn sowing. *Celery*, sow seed in boxes and place them in heat to produce plants for an early crop. *Garlic* and *Shallots*, where the soil is not wet and stiff should now be planted, if not done in the autumn. Plant in rows 6 inches apart. *Lettuce*, those in frames should have the glasses off them night and day, while the weather is mild. Make a sowing on a south border to succeed the autumn sowing. *Potatoes*, where there is not the convenience of frames or pits, plant on a south border for an early crop. *Rhubarb*, pots may now be placed over the roots and covered with dung or leaves. *Spinach*, a small sowing may be made between the rows of early Peas. *Turnips*, when young ones are wanted early, a sowing should be made on a slight hotbed. Traps should be set in different parts of the garden to catch mice. They now more readily take the baits than they will when there is other food for them.

FLOWER GARDEN.

All new groundwork to be proceeded with as rapidly as possible, so that planting may be completed in good time. The season having been so mild, trees and shrubs will commence growing much earlier than usual, such as are intended for removal should be taken up carefully and laid in by the heels till wanted. This will act as a check upon their early growth. The planting of shrubs is sometimes postponed from the autumn when it would be certain of being followed with more favourable results. However, it is sometimes unavoidable, but whenever the planting of shrubs takes place, it is advisable that they should be planted at such a distance from the walks and from each other that they would not interfere with either for several years. The mode of planting shrubberies adopted by some persons is very defective, as there is no attempt at arrangement, and when this is neglected at the time of planting, no after-thinning or removing, short of taking up and replanting the whole of the shrubs, will give them the effect that they would otherwise produce in such a situation. In planting shrubberies, those plants which are intended to remain permanently should be first planted, and the intervening spaces to be filled up with whatever plants may be at hand, and as they encroach upon the permanent plants they should be removed. Shrubs will not then require pruning, which, with digging about their roots, should be avoided as much as possible, if handsome specimens well feathered to the ground are the objects to be desired. The turning of walks may now be accomplished, and new gravel provided where necessary. All grass lawns and margins to have a thorough cleaning and rolling at an early opportunity.

FRUIT GARDEN.

Where nets or bunting cannot be procured for protecting the blossom of Peaches and Apricots, suspend from the top of the wall to the bottom of the trees a quantity of straw or hay ropes made with a few projecting loose straws. Dry fern or spruce branches may be nailed over the branches of the trees with advantage. Continue pruning and nailing as directed before.

STOVE.

Stove plants in general will now require an increased amount of atmospheric moisture with a slight advance in heat. Begin to repot Orchids, taking them in succession as they come into growth. Keep the plants well elevated and use plenty of charcoal in lumps of good size, fastening the whole that the plant may not easily be disturbed. Moss pegged on the top gives a good finish, and is useful for retaining moisture. When there is any fear of a deficiency in the atmosphere, syringe plants on blocks occasionally, the temperature to be 60° by night, 65° by day, rising to 70° on sunny afternoons.

GREENHOUSE AND CONSERVATORY.

Return all plants from the conservatory to the stove or greenhouse as they go out of bloom, and such plants as Euphorbia jacquiniæflora, Poinsettia pulcherrima, and other such plants which have done blooming, may be set aside and kept comparatively dry for a time. It may, perhaps, be necessary to top-dress or renew the soil around some of the borders; if such is the case let it be done before the end of the month, and give the plants a good soaking of clear weak manure water at the same time. Orange trees in tubs are liable to be affected by a black fungus on the leaves, having the appearance of soot. This should at all times be thoroughly cleaned off, and is easily and effectually removed with a sponge and some warm soapsuds and some sulphur mixed with it.

FORCING-PIT.

Continue to introduce Roses, bulbs, Lilacs, Sweet Briars, &c., for succession. Fumigate whenever green fly appears, and syringe the plants whenever the weather is favourable.

PITS AND FRAMES.

Examine the stores of half-hardy plants. Amongst them, in the majority of cases, will be found blanks, and some of the best store-pots, or established plants of the same, should be introduced to heat in order to procure early cuttings. No delay should take place in this matter, for much of the success in massing depends on having a stock of forward well-established and hardy plants at bedding-out time. W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Thoroughly cleaned and surface-gravelled walks when we could get at them, so as to forward labour. Cut and put more Ash-leaved Kidney Potatoes into a mild heat, to spring them before planting under protection, or out of doors when the soil is dry and friable, having found that in heavy soil little is gained by planting either in autumn or in winter. Sowed *Peas*, such as Sangster's No. 1, one row; Dickson's Favourite, two rows; Veitch's Perfection, one row; Jeyes' Conqueror, or Ne Plus Ultra, two rows. Sowed also in turf to be placed in Peach-house Sangster's No. 1, to be helped forward, and then transplanted for the first crop out of doors. We like boxes better; but all are full. Sowed Mazagan and Long-pod Beans out of doors, and some in turf for transplanting, and a score of No. 32-pots, four Beans in a pot. These when grown will be transferred to nine-inch pots, and placed in a late orchard-house to give a few dishes before we can get them in the open air. Tom Thumb Peas, sown in orchard-house, with plenty of air on, are now about 1 inch in height, and will come in a week or two before those in the open air. We have some 36-inch pots considerably forwarder, and these by-and-by being transferred to nine-inch pots will be kept a little warmer, to give us an early gathering. Sowed a score more of six-inch pots of the same dwarf variety, and placed them in heat, so as to be hardened off afterwards, and thus join the earliest before the rows in the orchard-house come in. Earthed-up Dwarf Kidney Beans in pots, and transplanted more from boxes in which they had been sown thickly. Gathered, or rather pulled, Radishes, and gave plenty of air to those remaining. Added a lining of hot leaves to Asparagus-bed in frame, which has produced abundantly; the same frame supplying Green Mint, Fennel, Sorrel, Tarragon, &c. Pricked-up the soil among Lettuces, Cauliflowers, &c., and earthed-up the forwardest *Potatoes* in pots, and transplanted more. In 12-inch pots use three sets, after being sprung, and if these sets had been rooted in small three-inch or four-inch pots previously, they will grow less vigorously, and yield their roots rather sooner. The having such things in pots enables a person to move them easily, and even give a little bottom heat when necessary. The last succession of ours is generally set out under the protection of Spruce trees, where they receive enough of light to ripen the stems, whilst the branches above them prevent the frost touching them to any extent. Sowed round Spinach between the Peas, and some Radishes, to let them take their chance without any protection. Turned over soil intended for Onions, as more depends upon having the soil in good order, than in sowing extra early. Made preparations for raising and fresh boxing a main walk in the kitchen garden; the Box being strong and nice now, but the walk being much too low, as the soil and dung introduced to the quarters for many years have raised them considerably, and the walk in damp weather cannot be kept so dry as is desirable.

FRUIT GARDEN.

Kept a mild heat in the first house of Peaches and Vines. Dusted *Strawberry* blossoms with a feather that were in bloom; in these dull days, partly on account of the dull weather, allowed none to stand in saucers, but in some cases put a little moss on the shelves. The leaves of some that were inclined to grow rather luxuriant were bent down over the rim of the pots. They will thus stand a good bend without injury, and at an early period more strength is thus apt to be thrown into the flower-truss. I notice that this season the flower-trusses take more time in coming than usual. Made preparations for pruning and washing Apricots and Peach trees, as well as hardier fruits. Broke the dung a little among Strawberry-rows, and sowed Melons on the 5th, because I saw that I could not have a bed or beds for them under a month at any rate, and few things like less to be cribbed and knocked about before final planting than Melons do.

FLOWER DEPARTMENT.

Roses in pots should now be pruned so as to admit of their being slowly forced, or brought on in a cool temperature. The plants should remain cool a few days after being pruned. The prunings, if of valuable kinds, may be struck or grafted. For grafting it is as well that the stocks be established in small pots, and then after being tied on as low down as possible, it will be as well to keep them close in a glass case for a week, and then to give a little bottom heat to accelerate the junction of stock and scion. Roses out of doors may mostly now be pruned, except the Teas and the tenderest Chinas and hybrids. This month is also a good time to move Roses; in the north it will be as well to defer doing so a little longer. There seems less danger in the moving just as the buds are starting. Potted off some of the best Roses that were inserted as cuttings in autumn, and gave them the benefit of a mild bottom heat to give them a start. The whole family of Gladioli, if not planted at once, might be laid thickly in soil, and be moved as wanted or as the ground gets ready for them. In the open ground herbaceous plants may be regulated, large heads lessened, and a little rich compost placed about those that soon exhaust the soil. We are glad to see that these old favourites are getting fashionable again; for mixed banks, or beds of herbaceous plants, are still fine things. Even in grouped flower-beds a few beds of elegant herbaceous plants are not only beautiful by contrast, but would often do much to do away with the level monotonous lumpishness of mere gorgeousness of colouring. Did I get near Mr. Weaver I might do something more with those large specimens than go on a journey of note-comparing. Placed Fuchsias, large ones and smaller ones, in the first vinery after pruning them; and as the house averages from 50° to 55°, as soon as the plants break will shake most of the soil from them and fresh pot, and syringe in sunny days until the roots are taking hold of the new soil. Cleared the Peach-house of bedding plants except some Alma Geraniums and other variegated ones below the trellis, so that they may get a lift of extra heat; and filled the shelves with Strawberry plants, dressing them as previously described. Gave all the air possible in mild days to keep bedding plants, as Calceolarias, &c., back, as room now for the next three months will be all the difficulty. Got a good [illegible] leaves together to heat, roll and help to startle the slugs out of them, so as to be in readiness to commence propagating Verbenas, Petunias, &c. We find there is nothing gained by beginning too soon, unless there be a new thing, much of which is wanted, or there is great room for keeping them afterwards; as, often when turned out to help themselves, as they can be too early, the labour is next to lost. All Dahlias desirable to multiply and get strong plants of before the middle of May, we have moved from a shed and put into a slight hotbed; the rest will be placed on the floor of a vinery or a Peach-house. Plant-houses general routine.—R. F.

TRADE LISTS RECEIVED.

Barr & Sugden's Guide to the Flower Garden, &c.—This is in reality the title to *Barr & Sugden's Spring Seed Catalogue.* It is a bulky pamphlet of 116 pages, illustrated with four woodcuts, and supplied with a visitor's hand-map of London. It is very well got up, and contains a great deal of information, both of a cultural and descriptive kind.

E. G. Henderson & Son's Seed List, 1862.—This also forms a pamphlet of 96 pages, and it, too, is one of those carefully-prepared catalogues which contain a great deal of useful information.

A Select Catalogue of Flower, Vegetable, and Agricultural Seeds, &c., by B. S. Williams, Holloway N.—This is a full and useful catalogue, consisting of select and very choice lists of all the different kinds of garden, flower, and agricultural seeds.

Among the other catalogues we have received we have those of *Messrs. Cutbush & Son, of Highgate; Messrs. Stuart & Mein, of Kelso, N.B.*, both seed and nursery lists; *Mr. Stephen Brown, Sudbury*, seeds; *Messrs. Smith & Simons, Argyle Arcade, Glasgow*, seeds.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Climbers for Back Wall of Greenhouse (*R. M. S.*).—With a stage 18 inches or 24 inches from the ground, and the wall only 8 feet high, we would plant the climbers in the border, and then train them along below the apex, and spur-prune every year, so that the flowering shoots would hang down in summer; and we would plant Passiflora cœrulea at one end, Passiflora cœrulea racemosa at the other, and Mandevilla suaveolens in the middle.

Scarlet Geraniums Diseased (*A Lover of Flowers*).—Your Geraniums are suffering from cold and damp. A warmer atmosphere, and a little drier, will make them all right—not those parts gone; but after all these are removed, and the whole of the affected leaves taken away, there will be enough of strength in the old stems to throw out healthy foliage. We suspect that in the temperature in which these plants were placed, the atmosphere should have been drier. Old plants, as repeatedly stated, will bear rough treatment; young plants will not stand such roughness.

Greenhouse Border (*J. R. W.*).—Fifteen inches will be wide enough for the plants you name.

Geranium Leaves Decayed (*W. F.*).—Your Geranium leaves had every appearance of being exposed to a bright sun when the leaves were moist, and the roots dry; we could not see thrips, but we could see where they had been. If you find any of these, you had better smoke the plants with shag tobacco, and be sure the smoke is cool; and next day lay each plant down in a shed, and syringe it well, with water about 65°, and keep the plants shaded until the leaves are dry. The condensed moisture from the glass, with a little inattention to air-giving, would produce scalding; but we fear you have also thrips. The soil is all right.

Back Wall of a Greenhouse (*Kate*).—The white will be apt to scald the trees by reflected heat as well as dazzle the eyes by reflected light. You had better add lampblack to the whitewash, enough to give it a darker or greyish tinge. We presume the back wall is to have fruit on it. If your Vines are, say, 1 foot higher than the rod you wish to train them to, you may cut off as much as that; but if you do not wish the Vines to bear until they reach the rod below the roof then one bud will be enough to leave at the rod, and all the rest downwards must be removed. We are not sure if this is what you mean. The smoke-chimney from the case must go directly out of the house, unless you can turn it into a chimney or flue.

ıg Solanum capsicastrum (*W. F.*).—Sow the seeds of the Solanum .e between this and April in a little bottom heat. Prick off the seed- hen up, and then pot singly first in three and then in five-inch pots ıt will give you nice flowering plants.

rries Falling Immatured (*J. G.*).—The trees might be moved with ıt we see no reason why they should not do well where they are. At e, we would not move them now; but as soon as the trees are in nake holes in the walk, and give a good soaking with water not less °, and if it contains a little soot or guano all the better. If the walk deep we would also take it out, fill with fresh, good, rich soil, and gravel to the depth of from 4 inches to 6 inches. Try one or both ›efore lifting, and let us know the result.

ciana pulcherrima Culture (*J. B.*).—The Poinciana is a low spiny rom the East Indies, and wants a medium temperature in winter of l from 70° to 80° to bring it into vigorous growth and bloom in spring ımmer. When done flowering clean and prune a little, and keep cooler and drier for a week or two, and then give more heat oisture until the end of September, when for ripening the wood nt should have all the light possible, and water be gradually d. It is easiest propagated by seeds, which should be steeped in hot ›efore sowing; also by cuttings in sand under a bell-glass. Small oots 2½ inches in length and a heel of the older wood attached are Place these in a sweet hotbed, and give air at night to prevent g. Fibry loam and heath soil, with a little leaf mould and sand, will t well Moisture as above alluded to, only use the syringe freely all ·, unless when in bloom, as then it would injure the long stamens that ıt beyond the flower.

ring Carnations (*Idem*).—Choose the shoot, strip off three or four ›wer leaves, fix on a joint most suitable, insert a sharp knife just it and let it go halfway through the shoot, then turn the knife, and ıp the middle of the shoot until you come to the next joint. A space the tongue, consisting of half of the stem between two joints—the art cut half through, and the upper part joined to the stem as before w layered and covered with earth; and when roots are protruded e tongued part it is cut away and forms a plant.

›us (*E. M. M.*).—The leaf you enclosed seems to be that of the eaved Birch, a deformed variety of the common Birch. Dumont's Powder can be obtained in the gutta percha balls at many chemists don. You can have the Numbers you require by forwarding four for each with your direction.

s Seeds (*H. G. C.*).—On your third of an acre, gravelly soil, sow at of March 2 lbs. Crested Dog's-tail, 1 lb. Hardish Fescue, 1 lb. Ever. Meadow Grass, 3 lbs. White Clover, and 1 lb. Small Yellow Clover.

'ing a Small Pit (*A Subscriber*).—A small iron stove, or a small ırnott's stove, made so as to be fed from the outside, and a metal pipe h it to the chimney, would be the cheapest and do to keep out frost from t 7 feet by 9 feet. To force a little, a small flue round three sides, or ould be the simplest alike for bottom or top heat; or a small boiler ›e fixed, and pipes taken from it. The difficulty is, that the furnace ı a place would do for one four times the size.

ıroom Spawn (*A This-year's Subscriber*).—If you look back to of our New Series, published Dec. 24, "Doings of Last Week," you l all the minutiæ you require. This is a bad time to make Mushroom You had better purchase half a bushel or what you want, and start making in spring and summer. The chief circumstance against you ifficulty of getting dung, &c., dried now.

ts for Wall of a Lean-to House (*Augustus*).—You do not tell your house is furnished, nor yet its length. For a winter display 'en at all times nothing would beat Camellias. For late winter and ›ring, fine foliage and masses of flower, and free growth, filling the ıuickly, few things would look handsomer than Acacia grandiflora, ın·, and lophantha. The Acacia armata would make a rich green and a mass of gold and green when in bloom. For climbing plants e a great show in summer we would place a Stephanotis at the warm Habrothamnus elegans in the middle, and a Mandevilla suaveolens at lest end. For baskets use Lobelia gracilis, Maurandya Barclayana, permums of sorts, Tropæolums of sorts, Saxifraga sarmentosa, Trades- ıebrina, Torenia asiatica, Thunbergias Ferns, Achimenes, &c.

s (*Aquarius*).—You will see announced very shortly what will meet ggestion, but we are obliged all the same.

rving Stakes (*G. B.*).—No treatment preserves stakes from de- in the ground so effectually as thoroughly charring their outsides. use coal tar, melt some fat with it and apply it hot; but you had irst sharpen your stakes and then char them. It is quickly done in a garden rubbish kindled in the open air. You then need not use tar.

ing Passion-Flowers (*H. B.*).—Every well-ripened bud on last wood of the Passion-Flowers is capable of producing a flowering shoot ason. Buds on imperfectly ripened wood will produce only shoots. od first made is likely to be the best ripened; and therefore you may ıst as much of that first-formed as you think you can find room for from it next summer, keeping in mind that if you leave much and ı such a box, a number of buds will not be likely to break or push.

ıd Perpetual Roses in Pots (*Idem*).—If the Roses are very good ı can give them the room, we would shift them from the 60's into , and turn them out at the end of March. If you have not the room ıy turn them out in well-prepared soil, and stick a few evergreen about them for a month or six weeks.

Asparagus Plants Removed (*Amateur*).—As so few heads come 'ear that they will not do much better this season. You could satisfy f by examining the plants and seeing if the buds are sound or not. ants require more trouble and care in moving than old Asparagus, ıt r or autumn is the worst time to move them. The best time is he plants show an inch above the ground. If you have made the beds at is so far good; but unless there is a sign of the old plants doing e would advise to fresh plant with one or two-year-old plants this just when the plants begin to move, and cover between the rows tten dung. In planting from your old beds you should have selected ngest and freshest roots, not the largest.

'caria Injured by Frost (*D. L. D.*).—Cut off the dead points of nches down to the live part. Do not leave any of the dead wood. l of next month will be time enough to do so.

Flower-garden Designs (*L. M. L.*).—For a circular plan take the centre of that we published in No. 638.

Tan to Gooseberry and Currant Trees (*J. M.*).—Fork over the surface of the soil, and put the tan on during the present month.

Various (*E. M. M.*).—That blanched shoots of Geraniums could not be rooted or be made useful if they could was one of the earliest questions which were settled in our pages. Your Geranium which so sported is called Cerise Unique, and the compost had nothing to do with the white shoots. They come in that kind, in all kinds of composts, and in no composts. Variegated Ivy-leaved Geraniums, as far as we know and recollect, have never been a desideratum. They have been in cultivation much longer than a generation, and are mentioned in almost every one of our volumes. Your second question should have been sent to the editors of the works referred to: and to your third question we reply, Never speculate on hybrid plants till they come into bloom.

Cats—Roses (*S. C. R.*).—Catch the cats in a drop-trap, put the trap into a bucket of water, dig a hole, empty the contents of the trap into that hole without looking at those contents, and return the earth into the hole. If any one asks you if you have seen his or her cat, you can then reply truthfully in the negative. The best *white* climbing Rose is Felicité perpetuelle; the best *red*, Gracilis; and the best *pink*, Indica major.

Names of Conifers (*P. O. O.*).—Your specimens are—No. 1, Picea nobilis; No. 2 one of the small varieties of Picea pectinata.

Pears and Cherries in Pots (*D. B.*).—As you purpose turning these out of your orchard-house to make more room for the Peaches, we recommend you to plunge the pots in a border beneath a south wall, and stretch tiffany over them from the wall down to the surface of the border like a lean-to. We should not be satisfied with merely covering the tops.

Grapes (*P.*).—Your plants of Buckland Sweetwater are not yet strong enough. No doubt they will fruit next year. The Jura Frontignan is Muscat Noir de Jura, and has a resemblance to the Black Frontignan.

Hyacinth Bulbs (*Ellen*).—After blooming in water-glasses they will not produce flowers the next year. They have had no opportunity of storing up the materials for such growth. If they had been bloomed in pots of earth it would have been otherwise. When you take the bulbs out of the water-glasses, plant them without breaking the roots in holes in a sheltered border, filling the holes with liquid mud made of the soil and water. Let them grow there for two or more years, and then they may again produce flowers.

Ridge Cucumber (*W. Whiteley*).—No Cucumber is better for growing on ridges than the old Long Prickly.

Price of Woodwork (*G. B.*).—We do not know the prices of such articles, and as prices vary in every locality, we should mislead you if we stated any. Apply to two or three makers of such articles in your own neighbourhood for their estimates.

Greenhouse Plants from Seed (*A Constant Reader*).—All the plants you name come true from seed, if you obtain true seed.

Various (*Westmorlander*).—If Ulex nana is kept regularly clipped, we have no reason to think that it will not keep thick and green at the bottom. It may make a low edging as Loudon says, but we never saw it used for the purpose. Messrs. Carter, seedsmen, Holborn, perhaps could supply you with seed. Do not cut your bush Pear trees until the buds begin to swell. Pyroligneous acid is only vinegar (acetic acid), obtained by charring wood in close retorts. It is very pungent, and has a strong smell of burnt wood. We have no faith in its power of preserving wood.

Names of Plants.—⁂In sending plants for naming our correspondents should remember that, as a general rule, garden varieties, especially when at all numerous—*e. g.*, Heaths, Epacrises, Azaleas, and still less the subjects more decidedly ranking as florists' flowers, cannot be named satisfactorily. We have not at our desk the means of identifying such as these; and we cannot undertake a daily visit to some nursery in order to do what our correspondents might generally do easily enough for themselves—*i. e.*, compare their plants with fresh specimens in some neighbouring collection. (*A Young Gardener*).—Erica hyemalis, and one of the deep red varieties of Epacris impressa, which you can identify at some nursery. (*J. D., Forfarshire*).—1, Polypodium vulgare; 2, Veronica beccabunga.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

March 1st. Halifax. *Sec.*, Mr. J. W. Thompson, Southowram, near Halifax. Entries close February 20th.

May 14th and 15th. Taunton and Somerset. *Sec.*, Charles Ballance, Esq., Taunton.

May 27th, 28th and 29th. Bath and West of England (City of Wells.) *Steward*, S. Pitman, Esq., Manor House, Taunton. Entries close May 1.

June 4th and 5th. Beverley and East Riding. *Sec.*, Mr. Harry Adams.

LIVERPOOL POULTRY AND PIGEON SHOW.

February 5th and 6th.

It is a true remark that the season of poultry shows would be felt to be incomplete without the recurrence of that one which has just taken place for the eighth time in the town of Liverpool, after the Birmingham and Crystal Palace Exhibitions are over; and the excitement connected with "winning and losing" at these two great collections has somewhat cooled down. The thoughts of amateurs in all parts of the kingdom turn naturally towards Liverpool as the last place of the season to which they must send their birds, either to crown by success former triumphs, or to submit to defeat with the inward resolve (as our grandmothers used to teach us) to "do better for the time to come."

We reckon the Liverpool Show amongst the number of our most valued occasions of competition, and that on many accounts. The prizes offered are liberal. The arrangements are always carried out by well-qualified and energetic men, and leave nothing to desire for the comfort of the birds or the satisfaction of exhibitors. In a show numbering more than five hundred pens, the duties devolving upon the Hon. Sec. could neither be few nor trivial: therefore it is but bare justice to remark that Mr. Lawrence seemed to be all but ubiquitous in his movements, and unremitting in his endeavours to please and satisfy his numerous friends. The awards appeared to carry the conviction of all parties with them; and, during the time that we remained in the building, we heard no complaints, and met with no dissatisfaction. Messrs. Lucas's repository (where the Show annually takes place), is well adapted for such a purpose; the light is good, the building lofty, the situation central. The pens in which the birds are shown belong to the Society; and, as the sides are fixed at optional distances on flat boards, we would respectfully urge that more space should be allowed for each pen—3 feet are not too much in length, especially for the larger varieties, such as Cochins and Dorkings; very little more than 2 feet in length was apportioned to each pen, evidently causing inconvenience to some of the birds. We pointed this out to Mr. Lawrence, who at once admitted its desirableness, and said it should be taken into consideration on a future occasion.

There is one point connected with the Show which has just been held, and which deserves from us especial notice—viz., that though this is the eighth poultry show held in the town of Liverpool, it is the first which has been judged exclusively by amateurs. We are aware there exists a difference of opinion on this question amongst managers and committee men, and we have not a word to say against the integrity of those gentlemen who, although dealers, are frequently engaged to act officially in awarding the prizes. Nevertheless, no better locality could have been selected than Liverpool to try the experiment; and we are happy to learn that the result has fully answered the expectation of the Liverpool Committee, whether regard be had to the correctness of the awards or to the expressed satisfaction of the exhibitors with the new system of judging inaugurated by them this year.

If there is one breed in which Liverpool excels more than another, it is the noble English breed of Game fowls, and no severer test of accurate judging could be desired than that which fell to the lot of the three gentlemen engaged to award the prizes in these classes, which were all well filled, and with birds far beyond the average of merit; yet the result of our inquiries from the Committee failed to elicit more than one instance in which the owner of one of the successful Single Game Cocks considered (to use his own expression) that his "hanimal" ought to have stood one step higher—viz., exchanged places with the "hanimal" above him. Beyond this we were informed by Mr. Lawrence that no complaint whatever had been made to the Committee.

We now hasten to a rapid survey of the classes as they appeared in the catalogue, and a few brief remarks upon the successful pens.

Spanish headed the list, and brought together fifteen pens, most of which contained birds which proved to what a point of excellence this handsome breed has been brought by careful breeding and perseverance. Miss Rake bore away the palm, followed by Messrs. Hyde and Shorthose as second and third. We much admired the cockerel in Mr. Brown's pen, his comb was perfection, but the pullets were small. Capt. Hornby's pen was highly commended. The Minorcas (or Spanish Red-faced as they were called), require no notice—they were indifferent.

Coloured *Dorkings* were numerous, counting twenty pens, and most of them of good quality. Capt. Hornby was first, Mr. Potts second, and Lady Louisa Thynne third. Silver Greys were better than we usually see them, though the perfect black breast was deficient in some of the pens. Lady Julia Cornwallis took the lead, closely followed by Mr. Cargey and the Rev. J. F. Newton.

The Buff *Cochins*, though only mustering ten pens, were the best lot we have seen for a long time. Surely the days of Cochins cannot be gone by if such birds as we saw at Liverpool are still forthcoming for our shows. Mr. Stretch maintained his reputation by winning first and third; Miss Musgrove second. Every pen was meritorious [illegible] Partridge C[illegible] equally good [illegible] and Mr. [illegible] [illegible]

[illegible]

The *Hamburghs* of all kinds came out in goodly array; but the Silver-pencilled failed to remind us of the good old times when Mr. Archer carried all before him in this breed. The first prizes went to Messrs. Munn, Martin, Brook, and Fielding.

The *Game* classes, however, were the chief attraction, every kind being well represented, as appears by the following numbers—Black-breasted Reds, 23 pens; Brown Reds, 18 pens; Duckwings and other varieties, 22 pens. In Black Reds the first and second prizes remained in Liverpool, with the well-known names of Hindson and Moss. Mr. Stubbs third. In Brown Reds Mr. Moss secured first and second, Mr. Fletcher third. In Duckwings all three prizes were won by Liverpool amateurs, Mr. Hindson and Mr. Worrall dividing them. In the "other varieties of Game" Mr. Fletcher took first and third; Mr. Wood second. Our limited space forbids us to notice the other pens in each class, which were highly commended. Suffice it to say they were all worthy of prizes, and would have won them had the competition been less severe.

The Game *Bantams* came out well, and filled eighteen pens. The names of Messrs. Bayly, Cragg, and Whitwell will be looked for here, and found in the order indicated as first, second, and third. The other varieties of Bantams were few in number, and, excepting the prize birds, not noticeable as to merit.

In Rouen *Ducks* we were pleased to meet with an old name in connection with this breed, and to find it also in the fore front of the competition. We need scarcely say we refer to Mr. Worrall, who won first and second, leaving only the third for Mr. Fowler. We had heard with regret that Mr. Worrall had given up this breed, but were glad to find ourselves mistaken, and hope to hear more of this gentleman's exploits with the breed for which he was once so famous. In Aylesburys Mr. Fowler made a clean sweep; but this is a tale our friends have now become accustomed to hear. In the "other variety" of Ducks, the prizes went to Blacks, Calls, and Muscovys. The first to Mr. Jessop, to a pen both small and pure in colour; the Calls were Mr. Bayly's; and the Muscovys Mrs. Blay's.

The other breeds were shown in Sweepstake Classes, of which we have before expressed our opinion—viz., that this plan does not answer, except for single cocks. With the exception of Mrs. Pettat's Polands and Mrs. Fookes' White Dorkings, there was nothing exhibited of any merit requiring notice at our hands. The Cochin chickens were a good class: the prizes were divided between Messrs. Felton, Tomlinson, Stretch, and Musgrove.

Two prizes were awarded for *Single Spanish Cocks*, Miss Rake's birds distancing all rivals. Twelve birds were entered in this class, and many of them were first-class specimens. In *Dorking Cocks*, the birds shown by Lady Julia Cornwallis and Lady Louisa Thynne were perfection. They won first and second, six birds competing. The *Single Cochin Cocks* were fully up to the mark, and showed remarkably well in size, condition, and feather—eighteen birds, and all meritorious, made a good display. Miss Musgrove carried off two of the prizes, the others went to Messrs. Stretch and Cartwright.

The *Bantam Cocks* came out in force, fifteen little fellows doing their best to attract attention, and requesting to know "the reason why" they had been sentenced to "solitary confinement." The three prizes were secured by Messrs. Camm, Cragg, and Bayly in the order indicated.

We come now, and lastly, to the grand feature of the Exhibition—we mean the classes for *Game Cocks* and *Cockerels*; twenty-four of the former, and twenty-two of the latter. We must refer our readers to the prize list for the fortunate prizetakers in these two classes. We certainly never saw a collection of our favourite birds so thoroughly up to the mark in every point of this really splendid and peculiarly English breed. They were judiciously reserved for the top tier of pens, and showed to great advantage. We will only remark that Mr. Hindson's Black Red cock and Mr. Moss' Brown Red cockerel were, in our estimation, the *beau ideal* of perfection in their respective classes.

In conclusion, we heartily congratulate our friends at Liverpool on the result of this year's Exhibition, and hope they will be encouraged by it to still greater efforts at their next merry meeting, and when it takes place "may we be there to see."

SPANISH (White-faced).—First, Miss M. L. Rake, Brandon Hill, Bristol. Second, S. H. Hyde, Ashton-under-Lyne. Third, J. Shorthose, Newcastle-on-Tyne. Highly Commended, Capt. Hornby, Knowsley, Prescot; E. Brown, St. Phillip's Road, Sheffield. Commended, H. Lane, Bristol; Miss M. L. Rake.

SPANISH (Red-faced).—Second, Miss M. L. Rake, Bristol. Third, J. Hind-son, Bar[illegible] [illegible]. (First withheld.)

[illegible] First, Capt. Hornby, [illegible] Second, A [illegible]

Hall. Chester. Third, Lady L. Thynne, Muntham Court, Worthing. ' Commended, H. W. B. Berwick, Helmsley, Yorkshire; C. H. Wake- alvern, Wells; Lady L. Thynne. Commended, A. Potts; W. Copple, on, Prescot.

INGS (Silver Grey).—First, Lady J. Cornwallis, Linton Park, Staple- Second, G. Cargey, Stone, Staffordshire. Third, Rev. J. F. Newton, ire. Highly Commended, Capt. Hornby, Prescot.

IN-CHINAS (Cinnamon and Buff).—First and Third, T. Stretch, Bootle. Miss V. W. Musgrove, Aughton, near Ormskirk. Highly Com- d, Mrs. H. Fookes, Whitechurch, Blandford, Dorset; C. Felton, Bir- am; W. Copple, Prescot; H. Tomlinson, Balsall Heath, Birmingham. traordinary good class.)

IN-CHINAS (Partridge and Grouse).—First and Third, T. Stretch, Second, C. Felton, Birmingham. Highly Commended, Miss V. W. ve, Ormskirk; P. Cartwright, Oswestry. Commended, E. Smith, ester; J. Bolton, Birmingham.

URGHS (Golden-pencilled).—First, J. Munn, Stacksteads, near Man- Second, Carter & Valiant, Poulton-le-Fylde. Third, J. Lindsay, ton, Ayrshire. Highly Commended, J. Munn. Commended, T. Shaw, n, Lancashire; A. Nuttall, Manchester.

URGHS (Silver-pencilled).—First, J. Martin, Claines, Worcester. W. Wood, Walkley, Sheffield. Third, W. H. Kerr, Worcester.

URGHS (Golden-spangled).—First, G. Brook, Huddersfield. Second, rrall, Knotty Ash, Liverpool. Third, H. W. B. Berwick, Helmsley, ire.

URGHS (Silver-spangled).—First, J. Fielding, Rossendale, near Man- Second, Lady J. Cornwallis, Staplehurst. Third, J. Terry, Mill ossendale. Highly Commended, Lady J. Cornwallis; H. Carter, Thong, Holmforth; J. Fielding. Commended, T. Dale, Middlewich, e.

(Black-breasted Reds).—First, J. Hindson, Everton. Second, G. W. he Beach, Aigburth. Third, J. Stubbs, Stafford. Highly Commended, Moss; N. Grimshaw, Burnley; E. Archer, Malvern; J. Keable, y, Berkshire; Capt. Hornby, Prescot; F. Worrall, Liverpool. Com- l, R. Woods, Worksop, Notts; C. Chaloner, Worksop; D. Ashworth,

(Brown Reds).—First and Second, G. W. Moss, the Beach, Aigburth. J. Fletcher, Manchester. Highly Commended, J. Wood, Moat House, ; J. Hartley, Commutation Row; T. West, Eccleston, St. Helens; rall, Liverpool.

(Duckwings and other Greys).—First and Second, J. Hindson, Ever- hird, H. Worrall, West Derby. Highly Commended, J. Fletcher, ster; G. Crofts, Birmingham. Commended, T. Carless, Hovering- otts.

(any other varieties).—First and Third, J. Fletcher, Manchester. W. Wood, Walkley, Sheffield. Highly Commended, J. B. Weeks, er. Commended, T. P. Wood, jun., Chesterfield.

AMS (Game).—First, T. H. D. Bayly, Biggleswade, Beds. Second, g, Kendall. Third, G. C. Whitwell, Kendal. Highly Commended, Allen, Glanmore, county Cork; R. H. Postans, Brentwood, Essex; ster, Sheffield; J. Camm, Southwell, Notts.

AMS (Gold and Silver-laced).—First, T. H. D. Bayly, Biggleswade, Second, S. Shaw, Stainland. Commended, G. Maples, jun., Waver-

AMS (any other varieties).—First and Second, E. Hutton, Pudsey, Highly Commended, Mrs. W. Worrall, Knotty Ash, Liverpool. nded, T. H. D. Bayly, Biggleswade, Beds.

(Rouen).—First and Second, H. Worrall, West Derby. Third, owler, Aylesbury. Highly Commended, E. Longton, Liverpool; im, Nottingham; S. Shaw, Stainland.

(Aylesbury).—First, Second, and Third, J. K. Fowler, Aylesbury. Commended, J. Holme, Prescot.

.—First, J. R. Jessop, Hull. Second, T. H. D. Bayly, Biggleswade, Third, Mrs. Blay, Gregory's Bank, Worcester. Highly Commended, irle, Prescot. Commended, J. Martin, Claines, Worcester; Capt. Igeli, Exeter.

USIANS.—Prize, Mrs. Blay, Gregory's Bank, Worcester.

NGS (White).—Prize, Mrs. H. Fookes, Blandford, Dorset.

A POOTRAS.—Prize, J. K. Fowler, Aylesbury.

DS (Golden-spangled).—Prize, Mrs. Pettat, Basingstoke, Hampshire. Commended, Mrs. Pettat. Commended, Mrs. Pettat.

DS (Silver-spangled).—Prize, Mrs. Blay, Gregory's Bank, Worcester.

RGHS (Black).—Prize, S. Shaw, Stainland.

N CHICKENS (Cinnamon and Buff).—First, C. Felton, Birmingham. H. Tomlinson, Birmingham. Highly Commended, Mrs. H. Fookes, d, Dorset; Miss V. W. Musgrove, Ormskirk; T. Stretch, Bootle.

CHICKENS (Grouse and Partridge).—First, Miss V. W. Musgrove, Second, T. Stretch, Bootle. Highly Commended, T. Stretch. ded, J. Ashcroft, Bootle.

S (White).—Prize, G. Lamb, Compton, Wolverhampton. Highly ded, H. Bates, Birmingham. Commended, G. C. Whitwell, Kendal.

SINGLE COCKS.

H (White-faced).—First, Miss M. L. Rake, Bristol. Second; ie, Sheffield. Highly Commended, T. P. Wood, jun., Chesterfield; ith, Oundle, Northamptonshire; R. Paton, Kilmarnock, Aryshire.

(Red-faced).—Prize, Miss M. L. Rake, Bristol.

NGS (Coloured).—First, Lady J. Cornwallis, Staplehurst. Second, Thynne, Worthing.

NGS (Silver Grey).—Prize, T. W. Hill, Heywood.

-CHINA (Cinnamon and Buff).—First, Miss V. W. Musgrove, Orms- cond, T. Stretch, Bootle. Highly Commended, E. Smith, Man- C. Felton, Birmingham.

-CHINAS (Grouse and Partridge).—First, P. Cartwright, Oswestry. Miss V. W. Musgrove, Ormskirk. Highly Commended, H. Bates, am; P. Cartwright; T. Stretch, Bootle.

-CHINAS (White).—Prize, G. C. Whitwell, Kendal.

RGHS (Golden-pencilled).—First, J. Munn, Manchester. Second, l, Heywood. Highly Commended, R. Parkinson, Poulton-le-Fylde.

RGHS (Silver-pencilled).—Prize, W. H. Kerr, Worcester.

RGHS (Golden-spangled).—Prize, H. W. B. Berwick, Helmsley,

RGHS (Silver-spangled).—Prize, S. Shaw, Stainland.

S (Black with White Crest).—Prize, C. J. Samuels, Manchester.

S (Game).—First, J. Camm, Southwell, Notts. Second, J. Cragg, Third, T. H. D. Bayley, Biggleswade, Beds. Highly Commended, M. Turner, Preston; R. H. Postans, Brentwood, Essex; W. Worrall, Liverpool; R. Hawkesley, jun., Nottingham.

SWEEPSTAKES.

Game Cocks.—First, J. Hindson, Everton. Second, J. Fletcher, Manchester. Third, G. W. Moss, the Beach, Aigburth. Fourth, H. Worrall, West Derby. Fifth, J. Stubbs, Stafford. Highly Commended, E. Archer, Malvern; S. Matthew, Stowmarket, Suffolk; E. Lister, Cheshire; C. Challoner, Worksop; J. S. Butler, Poulton-le-Fylde; H. Worrall; N. Grimshaw, Burnley; W. Watson, Cornwall. Commended, J. Hindson; A. G. Brooke, St. Bees, Whitehaven.

Game Cockerels.—First, G. W. Moss, Aigburth. Second, J. Stubbs, Stafford. Third, E. Archer, Malvern. Fourth, J. Fletcher, Manchester. Fifth, W. Cox, Derby. Highly Commended, J. Wood, Wigan; E. Archer; G. Cargey, Stone, Staffordshire; R. I. Robinson, Ulverston. Commended, J. Stubbs; G. Cargey; C. Challoner, Worksop; J. Firth, Halifax.

PIGEONS.

The show of Pigeons, although not very numerous, comprised many first-class birds which have taken prizes at most of the principal shows in the kingdom, several of the leading fanciers being represented. *Carriers* formed the first class, both prizes being awarded to Duns of very great merit. Mr. Eden maintained his first position. Good Blacks were also shown by the same exhibitor, Mr. Rake, and Mr. Goss, of Plymouth.

In Almond *Tumblers*, Mr. Eden taking first with a pair, wonderful in head and beak, the Birmingham decision being reversed. Mr. Rake taking second with good feathered birds. In Tumblers, any other variety, Mr. Cannan secured first with Black Mottles; Mr. Eden's Kites being second.

The entry for *Powters* was small, but contained first-class birds, Mr. Eden taking first with his well-known Blues. Master Smith's birds of the same colour being second.

Jacobins mustered strongly, Mr. Lawrence's Yellows deserving their first position, closely pressed, however, by Mr. Shaw's Reds.

The competition in *Turbits* was very close. Very fine small Blues of Mr. Shaw's winning. Reds being second. Good Silvers receiving high commendation.

Barbs were an extraordinary class, numbering fourteen pens, many worthy of a prize. Mr. Rake's Blacks stood first. The second being awarded to capital Yellows belonging to Mr. Lawrence.

Owls were a very pretty class, Mr. Rake's famed Whites as usual being to the fore. Mr. Morris's Blues second.

Fantails were an ordinary class. Plain-headed Whites and Blacks respectively obtaining both prizes.

In *Trumpeters*, Mr. Shaw's Mottles added one more to the list of honours they have obtained for their owner; well-feathered Whites being second; and good Blacks highly commended.

For any other breed the competition was keen, Black Spots again being first, Swallows second, Blue Russians third, and Brunswicks fourth.

The silver cup, value £5, given for Carriers and Powters, made another addition to the sideboard of Mr. Eden.

A second cup of the same value was offered for Barbs and Jacobins, which was carried off by Mr. Lawrence.

For Owls and Turbits a like silver cup was awarded to Mr. Henry Morris, for his well-known White Owls and a very pretty pair of Red Turbits, the hen especially being good.

The awards in the department gave great and general satisfaction.

Carriers.—First, P. Eden, Salford. Second, W. Horton, Birmingham. Highly Commended, W. Horton; P. Eden; McGregor Rake, Bristol; P. Goss, Plymouth.

Almond Tumblers.—First, P. Eden, Salford. Second, McGregor Rake, Bristol. Highly Commended, P. Eden.

Short-faced Tumblers.—First, W. Cannan, Bradford (Black Mottles). Second, P. Eden, Salford (Kite). Highly Commended, F. E. Else, Bayswater, London (Black Mottles); S. Shaw, Stainland; G. Goore, Aigburth Vale (Blue Beards).

Powters.—First, P. Eden, Salford (Blue). Second, Master H. Smith, Drogheda (Blue). Highly Commended, P. Eden (Blue); Master H. Smith (White).

Jacobins.—First, J. T. Lawrence, Newbie Terrace (Yellow). Second, S. Shaw, Stainland (Red). Highly Commended, F. E. Else, Bayswater (White); W. Cannan, Bradford (Black); H. Morris, Forest Hill, Kent (Yellow); J. T. Lawrence (Black).

Turbits.—First, S. Shaw, Stainland (Blue). Second, J. T. Lawrence, Newbie Terrace (Red). Highly Commended, W. Cannan, Bradford (Silver); E. A. Hargrove, Birmingham (Silver); J. T. Lawrence (Yellow).

Barbs.—First, McGregor Rake, Bristol (Black). Second, J. T. Lawrence, Newbie Terrace (Yellow). Highly Commended, P. Eden, Salford (Black and Yellow); S. Shaw, Stainland (Black); G. Goore, Aigburth Vale (Black); J. T. Lawrence (Yellow).

Owls.—First, McGregor Rake, Bristol (White). Second, H. Morris, Forest Hill, Kent (Blue). Highly Commended, D. Thwaites, Rock Ferry, Cheshire (White); W. Cannan, Bradford (Silver); F. Key, Beverley (White).

Fantails.—First, W. Cannan, Bradford (White). Second, G. Goore, Aigburth Vale (Black). Highly Commended, J. R. Jessop, Hull; G. Goore; J. T. Lawrence, Newbie Terrace.

Trumpeters.—First, S. Shaw, Stainland (Mottles). Second, W. H. C. Oates, Newark, Notts (White). Highly Commended, Master H. Smith, Drogheda (Black).

Any other Breeds.—First and Fourth, S. Shaw, Stainland (Black Spots and Brunswicks). Second, Master H. Smith, Drogheda (Swallows). Third, G. Goore, Aigburth Vale (Blue Russians). Highly Commended, Lady E. Talbot, Prescot; W. Horton, Michells, Birmingham; J. Sephton, Prescot; F. Key, Beverley; G. Goore; H. Morris, Forest Hill, Kent; E. A. Hargrove, Birmingham.

Carriers and Powters.—Silver Cup, P. Eden, Salford (Black Carriers and White Powters).

Barbs and Jacobins.—Silver Cup, J. T. Lawrence, Newble Terrace (Black Barbs and Yellow Jacobins). Highly Commended. J. T. Lawrence.

Owls and Turbits.—Silver Cup, H. Morris, Forest Hill, Kent (White Owls and Red Turbits). Highly Commended, W. Cannan, Bradford; F. E. Else, Bayswater, London; S. Shaw, Stainland; G. Goore, Aigburth Vale.

Judges.—Of *Poultry*, Charles Ballance, Esq., Taunton, Somerset; Richard Teebay, Esq., Preston; George Fell, Esq., Warrington. Of *Pigeons*, Mr. T. J. Charlton, of Stanley, near Wakefield.

TRIMMING FOWLS FOR EXHIBITION.

I am glad to see that the subject of trimming Spanish fowls is again brought before the poultry world. In your "Letter Box," in reply to "Ignoramus," you say, "Plucking out the feathers over the eye of a Spanish fowl would not only disqualify the pen, but subject you to the disgrace of having the fact written on a card and stuck up against the pen." This is what every honest exhibitor of Spanish fowls desires to see done. I would like to ask our poultry judges how it is they do not carry into execution this salutary plan, and stamp the exhibitors of such birds with the infamy they so richly deserve. This appears to me to be the only effectual mode of putting a stop to such disgraceful acts. Surely our keen-eyed judges cannot pass a pen of birds, one or more of which has been "plucked," without discovering the "attempt to cheat."

I feel quite sure if our judges were determined to put a stop to this paltry and disreputable conduct they might do so. Let them carry into practice the penalty, and disqualify the guilty party from ever exhibiting again. This done once, I think we should hear no more complaints of Spanish fowls being trimmed.—X. Y. Z.

NANTWICH POULTRY EXHIBITION.

This Association has now been established for three years; the regulations made at the onset were of a peculiar character, and have been throughout rigidly enforced. One of the rules limits the entries to parties resident within thirteen miles of the Nantwich Town Hall, and another, equally binding, enjoins that no poultry shall be exhibited except by their real owner. Most poultry amateurs would naturally suppose, that from these combined causes the Show would be limited both as to the number of entries, and yet more so as to the quality of the fowls competing. The Show just closed, however, proves beyond question that the locality can produce specimens of equal excellence to those met with at our largest meetings; and again, that in almost all classes the competition was a good one. The Nantwich Town Hall is peculiarly well adapted for the purposes of a poultry show—being well-lighted from both sides, and affording excellent ventilation. The pens are of similar construction to those of Turner, of Sheffield, and the Committee are worthy of all praise for the attention paid to the poultry whilst under their care; the fact is, more perfect arrangements are rarely met with. The only improvement that suggested itself to our minds, was that the centre pens should have been placed lengthways instead of across the Hall, as, by gaining an improved light, it would have rendered a general inspection far more easy.

In our remarks we intend to take the classes as they occur in the prize list. *Spanish* fowls head that list; the adults though good birds, were not shown in the condition we could have wished to find them so late in the season, many of them as yet having not recovered from moulting. Even the winners of the silver cup were imperfect on this point. The *Chickens* were in much better trim. A very good pen in this class was disqualified, from the fact of containing a cock that certainly must have seen several winters: this glaring deception, however, met its due reward.

The arrangements of the Committee placed Aylesbury *Ducks* [illegible] in order. Very many of the pens were really praiseworthy, [illegible] general; yet when brought [illegible] customary [illegible] that 17 lbs. were the full weight of even the first-prize pen. The Rouen Ducks were, throughout, a good medium class. In the "Extra Duck Class" a pen of East Indians took the first prize, a pen of well-matched Muscovys second, and the common Wild Duck stood third.

In *Geese*, the Empden variety far excelled the Toulouse. When tested by the scales they weighed 69½ lbs., their nearest opponents, a pen of Grey White-faced Geese, being 66½ lbs., whilst all three of the remaining pens of Toulouse reached 65 lbs. each pen. Judged merely by the eye, there are few parties who would not have formed very different conclusions. The first-prize pen of Cambridge *Turkeys* was the only lot that needs especial mention.

The *Dorkings*, whether White or Grey, were capital, the truth being, that amateurs may attend the majority of our public meetings without seeing better.

In *Cochins*, the Partridge-coloured and also the White ones were most creditable specimens; but the Buffs proved as decidedly indifferent. A wretchedly poor specimen of a Buff Cochin cock was the only entry for a sweepstakes. It must certainly have been a compassionate act on the part of the arbitrator to award him a prize, of his own entrance money back again (after the deduction of 1*s*. to the funds of the Society in accordance to the rules), for he certainly ill-deserved it. The fact is soon told—all the sweepstakes, except for Game cocks, at Nantwich proved a failure.

In the *Hamburgh* classes were many excellent pens, but not a few, otherwise perfect, lost all hope of success from the pen containing one bird with a loose comb lopping aside. We have again and again drawn attention to this always fatal objection.

The Silver-spangled *Polands* and the Blacks with White Crests were perfect, the former variety taking the principal silver cup for the best pen of poultry exhibited. This remark holds equally good in respect to the *Chicken* Poland class; but here, again, an old cock was detected shown as a chicken, disqualification, of course, ensued.

Among the amateurs present the remark was universal that the *Game* classes were as good as could be wished for. The neighbourhood of Nantwich is proverbial for its Game fowls, and we confess we never remember to have seen so spirited and close a competition—so much so, indeed, that scarcely a single bird was passed by the Judge without handling, and this infallible test proved them almost without an exception to be in first-rate condition. As a whole, the Brown Reds were, perhaps, the most perfect. But we cannot pass over without especial mention the Black-breasted Red cockerel belonging to Mrs. Broughton, of Wistaston Hall: of his age we never yet saw a better. This youngster added the inn-keepers' silver cup to the sideboard of his mistress.

The Black *Game Cocks* shown were decidedly the best of the colour we ever met with, and were birds of great power. This strain of Game fowls is much approved in the Nantwich district; those shown were peculiarly hard-feathered birds, possessed great constitution, and are reported to be indomitable in the cock-pit. We were gratified to see so much improvement in the dubbing of the Game cocks when compared to those shown at the previous meetings of this Society, and by referring to the published lists of prizetakers throughout the kingdom we find no small proportion of premiums are now being secured by breeders of Game fowls in this district.

The muster of *Bantams* was weak, but the collection of *Singing Birds* and *Pigeons*, also confined to local competition, was very praiseworthy.

The weather being most favourable the attendance was unusually good, most of the resident nobility and gentry of the district being present.

The following were the awards:—

Spanish.—Silver Plate, E. Viggor, Over. Second, J. Grocott, Nantwich. Third, J. Sheen, Tilston. Highly Commended, W. Woolley, Bunbury. Commended, J. Heath, Nantwich. *Chickens.*—First, J Grocott. Second, W. Woolley.

Ducks (Aylesbury).—First, E. Viggor, Over. Second, J. Wright, [illegible] Minshull. Third, T. Rigby, Winsford. Highly Commended, J. B. [illegible], [illegible]ele, Staffordshire.

Ducks (Rouen).—First and Third, T. Burgess, Burleydam. Second, E. Viggor, Over.

Ducks (Any other variety).—First, T. Burgess, Burleydam (East Indian). Second, S Birchall, Baddiley (Muscovy). Third, E. Bower, Nantwich (Wild). Commended, E. Viggor, Over.

Geese (Any colour).—First, W. Furnival, Norton. Second, J. [illegible], [illegible]horley Stock. Third, J. Sheen, Tilston. Highly Commended, E. Viggor, Over. Commended, S. P. Hope, Betley Hall.

Turkeys (Any colour).—First, H. Akroyd, [illegible] Hall. Second and [illegible]

Dorkings (White).—First, Mrs. Tollemache, Dorfield Hall. Second, T. Wood, Minshull Vernon. Third, E. B. Davies, Eardswick Hall. Highly Commended, Mrs. Tollemache.

Dorkings (Any other colour).—First, Mrs. Broughton, Wistaston Hall. Second. T. Burgess, Burleydam. Third, E. Tudman, Ash Grove. Highly Commended, H. Akroyd, Doddington; E. Tudman. Commended, T. Green, Stapeley. *Chickens.*—First, Mrs. Broughton. Second, Mrs. E. Tudman, Ash Grove. Third, Mrs. Tollemache, Dorfield Hall. Highly Commended, Mrs. E. Tudman; T. Burgess.

Cochin-China (Cinnamon, Buff, and Partridge). — First and Second, E. Tudman, Ash Grove. *Chickens.*—First and Second, E. Tudman.

Cochin-China (Any other colour).—First, J. Dodd, Minshull Vernon. Second, J. Dutton, Bunbury. Highly Commended, J. Dodd. *Chickens.*—First, J. Dodd. Second, G Williamson, Nantwich.

Cochin-China (Singl. Cocks, Sweepstake).—Prize, W. H. Hornby, M.P., Shrewbridge Hall.

Hamburghs (Golden-pencilled).—First, D. Harding, Middlewich. Second, G. Williamson, Nantwich. Third, J. Kitchen, Over Lane. Commended, W. H. Hornby, M.P., Shrewbridge Hall.

Hamburghs (Silver-pencilled).— First and Second, D. Harding, Middlewich. Third, G. Williamson, Nantwich.

Hamburghs (Golden-spangled).—First and Third, T. Burgess, Burleydam. (Second withheld.)

Hamburghs (Silver-spangled).—First, J. B. Bruce, Keele, Staffordshire. Second, T. Rigby, Fenny Wood. Third, T. Dale, Middlewich. Commended, T. Dale.

Single Hamburgh Cocks (Spangled).—Prize, T. Dale, Middlewich.

Single Hamburgh Cocks (Pencilled).—Prize, W. B. Etches, Whitchurch.

Polands (Any variety).—Cup and Third, J. Heath, Nantwich (Silver-Spangled Polands). Second, T. Sproston, Middlewich. *Chickens.*—First, T. Sproston. Second, J. Heath. Third, G. Williamson, Nantwich.

Game (Black-breasted Reds).— First, E. Viggor, Over. Second, J. Pedley, Nantwich. Third, T. Burgess, Burleydam. Highly Commended, J. Heath, Nantwich. Commended, J. Grocott, Nantwich. *Chickens.*—First, J. Heath. Second, T. Moore, Nantwich. Third, W. Forster, Marsh Lane. Highly Commended, E. Owen, Coppenhall; T. Burgess; J. Grocott; J. Heath.

Game (Brown-breasted Reds). — First, E. Bower, Nantwich. Second, J. Heath, Nantwich. Third, T. Burgess, Burleydam. Highly Commended, M. Oakes, Winsford; T. Burgess; J. Pedley, Nantwich; J. Grocott, Nantwich. *Chickens.*—First and Second, T. Burgess. Third, A. Phillips, Winsford. Highly Commended, E. Tudman, Whitchurch; J. Pedley; J. Grocott; C. Hollinshead, Minshull Vernon; W. Sowerbutts, Nantwich; J. Heath. Commended, J. Heath.

Game (Any other colour).—First, T. Burgess, Burleydam. Second, R. Roberts, Coole Lane Third, W. Forster, Marsh Lane. *Chickens.*—First, T. Burgess. Second, J. G. Pearson, Whitchurch. Third, T. Crawley, Jun., Tarporley. Commended, T. Burgess.

Game Hens (Any variety).—First, J. Heath, Nantwich. Second, T. Burgess, Burleydam. Third, W. Furnival, Norton. Highly Commended, W. Forster, Marsh Lane. Commended, E. Bower, Nantwich.

SINGLE COCKS.

Game (Black-breasted Reds).—First, J. Grocott, Nantwich. Second, J. Heath, Nantwich. Third, W. Galley, Nantwich.

Game (Brown-breasted Reds).—First, T. Burgess, Burleydam. Second, W. Forster, Marsh Lane. Third, C. Brown, Minshull Vernon. Highly Commended, J. Wilkinson, Norbury; J. Heath, Nantwich. Commended, T. Burgess; S. Blackburn, Nantwich.

Game or any other Colour.—First, W. Forster, Marsh Lane. Second, A. Heath, Winsford. Third, J. Wilkinson, Norbury. Highly Commended, T. Burgess, Burleydam; E. Bower, Nantwich. Commended, T. Crawley, Tarporley.

Best Game Cockerel (any colour).—Silver Cup, Mrs. Broughton, Wistaston Hall. Second, T. Burgess, Burleydam. Third, J. Pedley, Nantwich. Fourth, T. Simpson, Nantwich. Highly Commended, W. Cawley, Spurstow; J. Haimson. Nantwich; T. Whittingham, Batherton; W. Farmer, Nantwich; J. Willet, Nantwich; W. Furnival, Norton; E. Bower, Nantwich. Commended, S. Blackburn, Nantwich.

SWEEPSTAKES.

Game Cock (any age or colour).—First, T. Burgess, Burleydam. Second, W. Farmer, Nantwich. Third, J. Parton, Nantwich. Highly Commended, J. Heath, Nantwich.

Bantams (Game, any colour).—First and Third, T. Burgess, Burleydam. Second, J. Grocott, Nantwich. Highly Commended, W. Griffith, Nantwich; T. Poyser, Nantwich.

Bantams (Any other variety).—First, T. Rigby, Fenny Wood. Second, S. Boffey, Willaston.

Single Game Bantam Cock.—Prize, T. Burgess, Burleydam.

Mr. Edward Hewitt, of Sparkbrook, near Birmingham, officiated as Judge, and expressed himself in high terms of the arrangements generally.

LIGURIAN BEES AS HONEY-GATHERERS.

As "An Old Friend of the Black Bee" does not appear convinced by the evidence of "A Devonshire Bee-keeper," as to the superiority of the Ligurians on the "main point" of honey-gathering, I think it would be very desirable to call another witness into court, and would therefore beg Mr. Fox, who from keeping black bees in the same neighbourhood, must have had ample opportunities of judging, to favour us with the results of his experience and observations. If as favourable on this point as others, it is my intention to add a stock of Ligurians to my apiary.—An Inquirer.

[In reply to "An Inquirer," I can only say that with respect to what he considers the "main point"—viz., the honey-gathering qualities of the Ligurians, I can as yet give no results of my own personal experience. The queens sent to me from Switzerland proved failures, as also some attempts to introduce among black bees queens supplied me by "A Devonshire Bee-keeper," and it was not until the 18th of July last, that I had the pleasure of possessing an undoubtedly pure Ligurian queen at the head of a stock. Our honey season was over, and I was also much more desirous of multiplying queens of her progeny than of obtaining honey.

Previous to the successful introduction of the Ligurian queen, I had, through the kindness of my friend aforesaid, obtained royal cells, from which I had two Ligurian mothers, whose progeny were hybrids, though in appearance quite equal to those bred by any of the best yellow queens. One of these was at the head of an artificial swarm, and which I fear has, in some mysterious manner, been lost. The other was given to a hive from which all the bees had been expelled to form a large artificial swarm; a few bees being obtained from another stock to hatch out the brood. No attempt was made to induce them to work honey in a super, but the bees became very numerous in autumn, and the hive very heavy. Their activity, beyond that of any other hive in the same garden, was very remarkable.

But, although I cannot speak from my own experience, I can confirm every word that "A Devonshire Bee-keeper" has written in their favour. Of all the achievements in bee-keeping I have ever seen or heard of, nothing can compare to that accomplished by him with one of his hives; the account of which he has himself given in this Journal. From this single colony comb after comb, teeming with brood in all stages, was removed, together with bees, until (I speak from memory) nine artificial swarms were created. Notwithstanding this enormous drain on the population, the hive became so crowded that a large super was put on, and in a very short space of time nearly 40 lbs. of superb honey were collected.

As I saw this hive several times a-week, and watched the progress of the experiments with regard to the multiplication of swarms, as well as that of the filling of the super, I can speak as positively in favour of the Ligurian bees as if it had occurred in my own apiary, and would strongly advise "An Inquirer" to lose no time in obtaining a stock of them.—S. B. Fox.]

HOW I BECAME AN OXFORDSHIRE BEE-KEEPER.

(*Continued from page* 327.)

I confess to a glass of good hearty beer at meal time, our forefathers did the same; but mead! that was, when our forefathers were pagans, considered a beverage only sufficiently good for the halls of Valhalla, their heaven, to be drunk there after they were dead in reward for bravery, out of the skulls of their enemies whom they had slaughtered during life! In ancient times too, honey was considered of the greatest importance, and a bee-master no insignificant person. Even places took their names from its production, as Honiton in Devonshire, of which Westcote wrote, "This towne claymes prioritie for antiquitie before many other; but for the name, yf I should say yt was taken from the abundance of honye there made or found, I perswade myself you would smyle, and yet that may not be altogether sans reason, in regard to the hills adjoyning, on which abundance of thyme [or tyme] growes, in which the pretye creatures [the bees] are much delighted, and feed willingly thereon." But I must cease from anecdote and come to present reality.

So the honey having run from the combs, though not nearly so effectually as I could have wished, notwithstanding the moderate additional warmth of the fire, a method of facilitating the process I recommend with great reservation, as I never resort to the practice unless the honey is very thick and sluggish. Virgin honey would seldom, if ever, require the extra incitement; at any rate, whatever residue of honey does remain I reclaim it by emptying the contents of the canvass bag into a pan with water, in proportions of one quart of water to two quarts of comb, first making the water mix with what honey adheres to the bags by rinsing and wringing them into it. Occasionally stir the mash well with a wooden spoon, and at the expiration of three days strain the liquid through a bag, or bags, into a clean pan, and add and dissolve 2 lbs. of loaf sugar per gallon. Then place it approaching the fire, or in a temperature ranging 65°; spread a spoonful of yeast on a slice of toasted bread, and deposit it upon the surface of the liquor, where fermentation will soon commence, and may be continued uninteruptedly during three or four days, when it must be poured into a barrel, or stone bottle, and placed in an atmosphere a few degrees cooler to finish working, during which process it must be filled up occasionally from a jug containing a reserve of the liquor. A fortnight or three weeks are generally the time it takes to accomplish this. Then place the barrel or jar in the cellar, or in a cool place till the hissing becomes faint, when it is fit to cork down; afterwards, in a month or so, rack it off and rinse out the residuum, immediately return the liquor, and when it is become fine bottle it off, sooner or later to suit convenience; though, if the quantity is large, two years durance in the barrel would considerably add to its quality. I do not mean to pretend that it would even then equal the famed mead of our Saxon forefathers; but it will prove, rather than to have allowed the honey to become wasted, an economical, and by many considered a very palateable beverage. The specimen I submit is five years old, and I made it exactly after the above prescription. I also send you a specimen of my mead vinegar made in the same manner, with the exception I added coarse brown sugar in lieu of the loaf, and I made use of badly fitting old corks, and placed the bottles in a garret in all the sun they could get during two summers. It is six years old; methinks it a very good salad vinegar, and one of which we know the composition.

This year, in consequence of a greater quantity of honey remaining to the run-off comb, I have not allowed any sugar to the mead; it has gone through all its process well up to the present, and it is rapidly fining. I think it will prove sweet enough, and if it should not I can convert it into vinegar.

Turn we now to when we administered the yeasted toast, and then turn the smashed comb out of the bags once more into the pan, to remain till wanted; for I must come to consider the supers, with the remnant brood-combs, which have been upon age 2 and age 1 a fortnight. A journey from home induced me to take them off again so soon, in order that I might leave the hives in their winter wind-proof trim during my absence. I found the brood scarcely all hatched out, and the bees which were performing their foster-maternal duties were very reluctant to leave. It was dusk before they managed to tear themselves from the poor little forlorn-looking grubs in their unsealed cells; they would in three or four days have all reached maturity. I shall in future allow three weeks, at least, for this kind of super-work. From practice I can tolerably well judge the weight of a hive by lifting it, board and all, and on the 16th of September mine weighed in honey from 35 lbs. to 40 lbs. on the average, excepting age 1, which I set down at 20 lbs. I resolved on my return to extra-provision it with the inferior run honey, discoloured and disqualified by the bee-bread, which I did, and found since its increase by joins that fresh vigour indeed had at once been imparted to the colony, as they had added several pounds of honey to its stores. I gave them 8 lbs. of the discoloured honey in my fig-drum-feeder at 5 o'clock A.M. on the 2nd of October, and by 9 next morning they had stored it away, and the hive weighed nearly 35 lbs.

I explained my method of applying the feeder in No. 639, old series, though in my original notes I had intended the paper to appear here. So now we will melt the combs, which must be put into a canvass bag, the filled bag slipped within another, and to have their mouths tied with a piece of string. Then put them into a large iron pot, or saucepan, three parts filled with cold water and place it upon the fire to become heated, when the wax will rise like fat to the surface. It must be skimmed off with a ladle into a basin of clean cold water, and so on till no more can be gained from the bags in the boiler. The latter should then be emptied of their débris, which chiefly consists of the parchment-like linings of the cells. My six-year-old wax consisted of an astonishing number of these linings for each cell, and they are easily unfolded the one from the other in their wet state from the boiling. No wonder the bees become small and dwindle off in very old stocks! Put the skimmed wax from the basin into a stewpan, or pipkin, to merely melt, not boil it, so that it can be poured into a soup-plate or earthenware shape of some sort. When the wax is nearly cold turn it out of the shape and flay away the bottom part with a knife should it appear grouty or discoloured from settlings. In fact, it would improve the appearance of the wax altogether to melt it over once or twice more even; and that is how the enclosed specimen was operated upon.

The furniture cream is made from my virgin or super wax, and the waterproof dubbing for shooting-boots is made from my old hive wax. Both of the concoctions are excellent in their way, but their receipts are a sealed letter for me. They are manufactured by my brother, who has an advertisement in the pages of this Journal. But after all these specimens, writings, and advice, the great feature is the honey, and you cannot form a just opinion without I enclose a modicum of that also. Now, I think, I have exhausted the pith from my notes and said all that is necessary for me to say on my management, and the domestic economy accruing from the honey bee.—**Upwards and Onwards.**

THE CHEMISTRY OF HONEY.

In an article under the above head which appears in your last Number, I perceive that it is decided by a quotation from Mr. Taylor's excellent work, that M. Reaumur, the great French naturalist, and probably also the very highest authority upon such a point, is altogether wrong in stating that a great change takes place in simple syrup during its sojourn in the stomach of the bee. As I happen to hold, and have already expressed a similar opinion to M. Reaumur, I would suggest that Mr. Taylor and the Editors of THE JOURNAL OF HORTICULTURE should resolve themselves into a committee of taste to whom I will forward a portion of comb in which simple syrup has been stored by bees, to be fairly tested by them at their breakfast tables, if they will, on their parts, undertake to submit an impartial statement of the result to the readers of THE JOURNAL OF HORTICULTURE.—**A Devonshire Bee-keeper.**

P.S.—If it be a fact, as stated, that sugar cannot crystallise if a little acid is contained in the syrup, permit me to ask how it is that sugar is so apt to crystallise in household preserves in which acid is always present?

[We must decline being the umpires, and should be unwilling to be satisfied with any experiments that were not conducted so as to exclude the possibility of error. To take syrup from the cells of an old stock would not satisfy us, for the reek of honey remains in them after the cells have been emptied of it by the bees.

Sugar may crystallise in the gummy juice of fruits, though it will not in acidulated water. It is the result of the universal experience of the sugar-manufacturers in the East and West Indies, that the sugar will not crystallise until the acid in the boiling sugar-cane juice has been neutralised by adding to it lime.—Eds.]

PRESERVING KIDNEY BEANS.

When Kidney Beans are in full bearing the supply is generally not only enough, but more. If those which are not wanted for immediate use are gathered when quite dry and laid in layers in a stone jar with a good sprinkling of salt between each layer, they will keep good for many months. I have been, and am now, using Kidney Beans which are as good as when they were plucked.—**Mary.**

OUR LETTER BOX.

Claiming Fowls at Shows (*A Reader*).—So soon as the hour fixed for closing a show has arrived any right to claim birds at that show is done away; and any one attempting to enforce such a claim must be very ill-advised.

Egg-and-Chicken-Producing Stock (*Hypnum*).—Our own experience is decidedly in favour of a coloured Dorking cock with Cochin-China pullets. They lay all the winter, and the chickens are large with abundance of meat on the breast. The pullets are apt to be broody in the spring and summer, and, therefore, we would have some Spanish hens to supply eggs during those seasons. Thanks for the Hypnum.

Partridge and Grouse Cochin-Chinas (*Inquirer*).—The following are the distinctive descriptions, extracted from our "Poultry Book for the Many:"—"*Partridge.*—Plumage: cock a black-breasted red bird. Hen pencilled with black on a buff ground throughout, the darker markings prevailing; the pencilling not parallel as in the Hamburghs, but rather following the outline of the feather. *Grouse.*—The hens darker than the foregoing, less of the ground colour being visible; the markings also are less distinct, closer, and rather to be described as a grizzle. Cock, a dark, mottle-breasted red bird." They are very distinct, and if you allow a cock of one of the varieties to run with a hen of both sorts, the chickens from the hens not of the same variety as the cock will have usually a mixed plumage, which would endanger their success as exhibition birds.

Varieties of the Canary (*A Young Fancier*).—You will find all the varieties of Canaries fully described in THE COTTAGE GARDENER during 1860, Vols XXIV. and XXV. The series is now nearly completed and will be published in a small volume.—B. P. B.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	FEBRUARY 18—24, 1862.	Weather near London in 1861. Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
18	Tu	Erica rubra calyx.	29.604—29.532	57—32	S.	·01	11 af 7	18 af 5	49 10	19	14 11	49
19	W	Erica vernalis.	29.608—29.578	52—27	S.W.	.04	9 7	20 5	morn.	20	14 6	50
20	Th	Gnidia imberbis.	29.594—29.379	50—40	S.	—	7 7	22 5	10 0	21	13 59	51
21	F	Sun's declin. 10° 32′ s.	29.462—29.296	46—40	S.	·01	5 7	23 5	32 1	☾	13 52	52
22	S	Hovea purpurea.	29.614—29.566	54—38	S.W.	·08	3 7	25 5	43 2	23	13 45	53
23	Sun	Sexagesima Sunday.	29.533—29.500	48 -40	N.E.	·41	1 7	27 5	44 3	24	13 36	54
24	M	St. Matthias.	29.007—29.746	45—36	N.E.	·07	vi	29 5	33 4	25	13 28	55

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 45.7° and 31.4° respectively. The greatest heat, 58°, occurred on the 23rd in 1846; and the lowest cold, 2°, on the 17th in 1855. During the period 136 days were fine, and on 102 rain fell.

ROOTS AND LEAVES, AND THEIR ACTION.

A COUNTRY gentleman and his gardener had an argument about roots and leaves and their action, and referred to the writer's opinion, by which they agreed to abide. But the subject is far too good to be disposed of privately, too much having been said on the subject.

The gardener writes thus: "I have a question in vegetable physiology to ask, which is so simple and yet so enigmatical, that I do not want to bore the Editors of The Journal of Horticulture with it, and I thought I might trespass on you this once." Just think if one hundred readers only out of so many thousands having "thought" the same thing, and you will see the necessity of the constant announcement of "We request that no one will write privately," &c., issued weekly "to correspondents," and yet human nature is so weak in the strongest of us, that every one of us writers in this Journal feels pleased when he is asked, or trusted individually about what has been written, although it is out of all reason to suppose for one moment that any of us could stand the artillery of private correspondence. I briefly answered the "good master" and his excellent gardener, but told them at the same time I should make their argument a text for a discussion in these pages without mentioning names.

The argument was "about the rooting of Vines. The master maintained that spongioles are thrown out simultaneously with the buds. Whilst the gardener holds that the heat of the house liquifies the sap in the stems of the Vines, the buds burst, and root action does not commence till after the buds are developed."

Now, just read over their argument, or rather their difference again, and make yourself master of it, if you take any interest in the subject; for depend upon it we shall have currents of hot air passing over it ere the end of it is yet seen in the distance.

I wrote back to say, that as far as I could see they were both practically not far from the mark, but that they did not explain themselves according to theory—that, in fact, they were in the same kind of fix as those who discussed the disease in variegated plants. With the gardener I took upon myself to be more plain, and I told him his notion of the heat liquifying the sap in the stem was exactly the reverse of the fact. But the question reads two ways, and he was perfectly right, while I maintain that he was as far wrong as that doctor was whose views on the same subject Dr. Lindley said, not long ago, were "exaggerated nonsense." But gardeners must not come to such hard blows in discussing questions referring to their craft; it would not look well in them to do so, and big people never think well of people under them, if they, or rather we, cannot master our tempers, and keep ourselves as much as their ice from currents of hot air.

"Leaves make roots and roots make leaves," is a common and a true saying, but it is not all the truth. Roots are made without leaves, and leaves are made without roots; but neither will go on prosperously for more than one season in the absence of the other, save in the kinds of plants to which leaves were not ordained at the beginning. But the leaves are not the first cause of setting roots in motion, or, as the gentleman puts it, "of throwing out spongioles."

But let us explain as we go. Spongioles or spongelets, or sponge-like organs, are the very ends of the roots of all plants; and a worsted glove on the human hand would make any of the fingers represent the end of a root more nearly than anything to which it had ever been likened. The end of each finger would be the actual end of the wood of the root, and the worsted finger of the glove would be the spongelet, as you would know to your cost, if you put the finger of the glove in contact with scalding water. The worsted threads and fibres would suck in the boiling water like a sponge, or spongiole, or spongelet, and you would burn your fingers, as many do who do not understand the glove-in-hand in an argument. Then the sponge-like power at the ends of the roots is a hygrometrical action, not the action of the leaves far off or near to it.

All parts of the system and circulations of plants have been likened to similar parts in the animal kingdom, except the one part which is the nearest to the truth, and that of itself is sufficiently singular. With the exception of the sexes in both kingdoms, there is nothing in all the vegetable kingdom which comes the nearest to the pulse in animals than the action of a spongelet. I am not doctor enough to know exactly the precise period at which the pulse begins in the babe, but we all know that the pulse does not cease in the adult until it is all over in this world; and it is exactly so in the vegetable kingdom. The root action, that of the spongelet, never ceases day or night, winter or summer, from the moment the embryo of the seed is free from the lobes in germination, till the ancient Oak or Vine has crumbled by natural decay from the effects of old age. I say "crumbled," because in all trees the roots survive the trunk under ordinary circumstances. Then, if root action really begins at that early age, and never ceases, like the pulse in animals, till death occurs, whence is it? It has the same source as the beating of your own heart—it is consequent on vitality, and on it alone. It is the power of life in us, and that of existence in plants and trees. Let root action once cease entirely, except from some temporary cause, as by extreme frost, and the life of the strongest tree is gone with it. How, then, comes it that we gardeners speak and write so confidently of the roots being thrown out only at such and such times, of the root action having commenced, or must only begin, or in reference to, a certain progress of the annual growth?

Before answering these two questions, allow me first to discourse on my text and keep these answers back for the application I mean to give to the subject. However, if you have seen the drift of the tale, you see that there cannot be any such thing as the beginning of root action in the forcing of fruit trees planted out in borders. Then the text is, that the heat in a vinery at forcing early in the spring "liquifies the sap in the stems of the Vines, the buds burst, and root action does not commence till after the buds are developed." And a very good thing it would be to some of us if it began even then in the sense of the meaning here implied. But I said the way the gardener put it would read two ways, and I take the way which is against himself first.

The heat of a vinery does not liquify the sap in the stems—it does exactly the contrary; the sap is thinnest the moment it is within the spongelet at the extreme tip of the root, and it is then in motion onwards by the force of vitality alone, without the assistance of the leaves, for then there are no leaves to give it force. The same is the then condition of the sap of all deciduous trees like the Vine. The force of vitality, or of life, aided by the returning heat of the spring, moves on the sap in all parts of the roots, stems, and branches of a tree. At first it is mere water in which are dissolved the salts and the essence of the kind of soil whence it is drawn together, with various gases. This water, called sap, so impregnated, in moving on mixes with the juices in the roots, and "liquifies," or melts, the vegetable mucilage in these juices; the mixture then becomes more dense than the sap was in the first instance; and in its progress upwards through the stems and branches, this denser fluid, or sap, acquires the same properties as the natural products of that kind of plant. If it be a tanin property, as in the Oak, the sap has it by this time without the aid of new leaves; if it is a Birch tree, the rising sap may be tapped and be made into Birch wine; if, as in the Sugar Maple, the same process of tapping will get sap to make sugar from, and so on, for all the properties, including poisons which are the products of trees, and all before the leaf is expanded; but recollect, these products are from the workings of the leaves of the preceding season or seasons.

At last the roots and the stems and branches are so full of this denser sap, which sap is so impregnated with these products, that if you prick some of them with a pin they would bleed, and ultimately they do actually burst—burst into new foliage. The large field for the expanse of the sap offered by the leaves, together with the vital power of the leaves themselves to draw in the sap, is the exact point at which the action of leaves begins to bear on the action of the spongelets, and gives to the vital action of the roots a tenfold force, more or less according to the kind of tree and the state of the roots as to their health and numbers.

The leaves are as much the stomach of plants as they are their lungs. The sap or food is now in the stomach for digestion, and it is just as essential to keep the stomach and the lungs of plants in good order as it is with ourselves. One of the conditions, the most essential for plants, is clear sunlight, for they cannot digest in the dark. The way they digest the most part of the sap is by parting with the more watery part of it by insensible perspiration from their upper surface, and thus rendering it more dense than formerly. Then, if the pores of leaves are filled up with dust or dirt it hinders digestion most certainly. So you see that clear light and a clean skin to the leaves are the two first elements for the healthy digestion in the leaves of the very food of plants.

After digestion—that is, after the food of plants, the rising sap, has been digested and aired as one may say in the upper surface of leaves, it is called the true sap, and by this time it is made free of all waste and water, and has received the properties peculiar to the kind of plant, solely and altogether in the upper surface of the leaves. All that way of digestion and airing of the food of plants being now complete, the true sap falls into another set of channels on the under surface of leaves, by which it returns to the branches, stems, and lastly to the main limbs of the roots, there to remain to the spring rising again, after having expended in every part of the system that which was needful for its own increase, or for the maturity of its product.

Then, in the autumn, what with playing so many parts, and what with the returning cold of that season, the rest of the returning sap gets much thicker than it was on getting down from the leaves, and this condition of the sap they call by the [illegible] name "inspissated," which is from two Latin words which mean to thicken a fluid. Was that not a clear and definite expression of my friend, the gardener down the country, when he said the heat of that vinery liquified the inspissated or thickened sap of the preceding autumn, by adding to the natural force of vitality which impelled or forced up the much thinner rising sap as we have just seen? So you see the heat did the thing after all. But so many people think they are so wise as that they could see his meaning to be that the thick sap, the vegetable mucilage, as one might say by this time, had itself been liquified; whereas his meaning was that the heat accelerated the rising of thin sap, and this thin sap it was what he understood to liquify so much of the mucilage by coming in contact with it in the soft wood of the root and stems through which it ascends at this early period by forcing, and also at a later period by the natural force or stimulus of finer weather.

For my part I cannot see a pin's difference between the master and his gardener when I come to analyse the points on which they argued.

The definition of the mixture of the spring sap with the remains of the last autumn's reserved portion of the true sap of last year is a new one, and a very good one too, as it is just the opposite of inspissated. "Liquified" is as true an expression of the condition of the first movements of the sap in spring as "inspissated" is that of the condition of last season's remaining sap at the fall.

A *resumé* of the whole argument would stand somewhat in this fashion: Spongelets are the tip ends of all roots; they are present, under ordinary circumstances, from the sprouting of the seed till the plant dies of old age. Although the vital or life action of spongelets be slow in winter it never ceases except by frost or accident.

The cause of the action of spongelets is entirely independent on leaves or top growth—the cause is consequent on vitality alone; but, during the active period of growth, the requirements of the leaves, or of the system of the plant through its leaves, add powerfully to the vital action; and ground heat is the next greatest promoter of it. But, as by artificial means, gardeners can bring these auxiliaries to vital forces to bear upon their subject in hand before the natural period, so also by the same means can they prolong the vital force, and go on increasing the length of roots and the multiplication of spongelets for a long period after the leaves have fallen in the autumn.

I have seen the increase of the roots effected by express experiment; the root run out fox-tail fashion, or full of small fibres, to the length of 20 inches between the fall of the leaves and the bursting of the next crop of leaves. The fact is familiar to most gardeners in some way or other, and one gardener made the experiment with a bonfire-like movement, by which he made the sticks in garden rubbish, which he was charring, to strike roots in the dead of winter, and the ground was so warmed under, and near to the place, that no one ever knew how long the roots of trees in that direction had extended by the mere force of artificial heat without any assistance from the great promoter of the vital forces—the leaves. Some, again, cause the spongelets and all the fibrous roots to perish annually by drying the balls in which they were, and by a system of bottom heat they made ten new roots for every one they lost, with fresh mouths or sponge-like suckers, before a leaf is on to help them. But that side of the question another day.

D. Beaton.

A FEW DAYS IN IRELAND.—No. 14.

TRINITY COLLEGE GARDENS, DUBLIN.

(*Continued from page* 390.)

Perhaps the most interesting thing to the lovers of the native Ferns would be some fine boxes of Killarney Fern (Trichomanes radicans), the boxes being placed inside of a greenhouse. These boxes are similar to the strong-glazed cases in which plants were sent home from China, and sent out to Australia. As far as we recollect, they would be 4½ feet long, 27 inches wide, and 24 inches high at the sides, with hipped ends a foot higher, and the top formed thus—of two hipped sides glazed, one side fixed, the other hinged at the ridge. In these boxes the Ferns are planted almost entirely in moss. There are small openings in the front of the box for air, and larger openings behind; the plants thus have plenty of air at all times, and have also plenty of light in winter and spring, especially in dull weather. In summer the tops are covered with a thin cloth, or paper, or a coating of whiting; in summer generally the plants are watered twice a-week, and once a-week in winter. We suspect, however, that in the former case they get many a dewing from a fine syringe. These plants had the finest fronds we had ever seen, many of them 18 inches in height, full of fruit, and spores vegetating freely. Moisture and free air seemed to be the chief things relied on. We believe some 9 inches or 10 inches are a good size to get these Fern-fronds in their natural habitats. We observed that the lid of each box was fastened with a small padlock, so we presume the Curator attends to these pets chiefly himself. Even the lock, however, could not keep pilferers from them. The slits for air in the box are narrow, but ladies had found them out and got their pretty hands through them too, and nipped off pieces as souvenirs. Would that some Venus among them would contrive a sort of trap, not to hurt, but to hold the fair culprits until they should feel thoroughly ashamed of themselves. The Andrewsii variety we also noticed, and a pretty plant of the Waterford variety, which Mr. Bain considers to be to the original what Asplenium acutum is to Asplenium adiantum nigrum. He only knows of one more plant of this variety in cultivation.

Fifth. In the same house in which are these boxes of Killarney Ferns is a fine plant of Ruscus androgynus, covering most of the back wall, and trained down several rafters. In this range, passing all others, we would instance as fine plants and interesting from their foliage alone, Lomatia ferruginea, a beautiful Protead, allied to Telopea; Protea cordifolia, a fine plant with large rounded sessile leaves, and reddish stems of a somewhat pendant or trailing character, promising to make a good basket-plant; Chamærops humilis, nice plants; good specimens of Strelitzia reginæ pumila, the flowers of which rise higher and show better in proportion than reginæ; Calophyllum inophyllum, a hardwooded plant with beautiful leathery foliage, the veins going parrally across from the midrib; Cordyline indivisa, a noble Yucca-like Lilywort, the leaves when full grown being 6 feet in length and 6 inches across; Cycas revoluta, and other Cycadæ; a fine plant of Xanthorrhæa hastilis, which is a charming object, with its large tuft head of recurved, drooping, rush-like leaves, even without its tall pyramidal flower-stem; a new species of Wildenovia, with stems somewhat resembling Asparagus in their mode of growth—if anything, more interesting than Wildenovia teres; good plants of Littæa grandiflora, or Buonapartea juncea, alike beautiful in growth and beautiful with its pyramidal tall flower-stem; and the last we will mention here is the Kingia australis, a rush plant of much the same habit as the Buonapartea, with a strong short arborescent stem, and a large head of rush-like leaves, some standing upright, others nearly horizontal, and others depending, each individually and collectively far exceeding the Buonapartea in elegance and beauty—a picture worth going miles to see, and the only specimen we believe in these islands at present.

Of stove plants we will merely name a few of great size and beauty—Dracæna draco, Urania speciosa, fine large-leaved Musad; Latania borbonica, with huge leaves unbroken and uncracked; Coccoloba pubescens; Seaforthia elegans, the New Holland Palm; Corypha australis, Fan Palm; Sabal Blackburniana, &c. Among large specimens of Ferns were Cyathea elegans, Doodia australis, Gleichenia flabellata, very fine, and others; Lonchitis aurita; L. pubescens, very fine; Dicksonias and Alsophilas, &c.

Among fine plants of Orchids we noticed several Cattleyas in bloom; also two large fine masses of Epidendrum vitellinum in flower; also a good number of Oncidiums, as papilio and others; a good Phalænopsis, several Vandas, &c.; and in flower in the colder houses were several varieties and species of Blandfordia, Tritonia, &c.

Sixth. We will now allude to three or four things which were in great plenty, but which, in general, are scarce even in good collections, and

1st, Sarracenias.—Of these there were a good variety, and in high health, as purpurea, Drummondii, variolaris, &c. The pots were mostly standing on moss. A moistish atmosphere suits them generally, but especially in summer. Propagated by division of the plants, best done in spring.

2nd, Cephalotis follicularis.—The stock of this New Holland Pitcher-plant is both fine and extensive. We noticed masses of it not less than 18 inches across; but these, though now looking like one plant, were formed by putting several plants into the same pot or basin. The soil seemed chiefly to be chopped sphagnum, peat, earth, broken pots, &c., and most careful watering to apply plenty of moisture to roots and atmosphere when growing. This is freely propagated by dividing the roots into very small pieces, and there is hardly such a thing as the smallest bit refusing to grow.

3rd. Dionæa muscipula (Venus's Fly-trap).—In the same house with boxes of Killarney Fern were many plants in good order, the pots standing on damp moss in flats or pans. The treatment as respects soil seemed much the same as that recommended in the *Cottage Gardener's Dictionary*—namely, heath soil, sphagnum, and bits of potsherds. There, too, a casual mode of propagating it is referred to, by laying the leaf amongst damp moss; but Mr. Bain keeps up a good stock chiefly by leaf-propagation. "The leaf or leaves of spring growth are taken off with the petiole attached to it; that petiole, inserted as a cutting under a glass in the usual way, becomes in a short time furnished with buds along the margin on each side of the midrib, and these soon become little plants. Another mode and a good one (although much fewer plants are obtained), is when potting to take off the old part of the stem which is usually bare of leaves, and proceed much as in the case of the leaves. By these modes a plentiful stock may be kept up, and in a healthy condition in winter as well as in summer if the place is cool enough, as a warm greenhouse or a medium stove. In a warm stove it generally ceases to grow in winter."

4th, Ouvirandra fenestralis (the Madagascar Lace-plant).—Of this there was a good number of plants, good-sized and very small, and growing in tubs and pans without any tank, the plants being covered with water in proportion to their age and size. This is increased by dividing the roots into very small pieces. Almost the smallest nip seems, according to Mr. Bain, to possess a perfect organism for being developed into a perfect plant. Of course the less the bit the less the plant will most likely be. Some water-pans seemed to have ever so many dots just beginning to push. "It is grown in lumps of peat, and the water is renewed by flowing the pans over daily. Besides, we manage to draw off the water from the bottom of the pans two or three times a-week. We grew small plants at about 3 inches below the surface, and large ones from 6 inches to 8 inches, or even more; but in every instance it grows freely."

Such are a few of the salient points in this quiet retired garden of the College authorities. We left it with a feeling of pleasure mingled with regret that we could recollect so imperfectly the information so kindly and freely communicated by Mr. Bain in conversation. As to writing upon some subjects of general interest, he assured us he had no time for such work—that he really had nothing worth communicating, and, with characteristic retiredness, considered himself only beginning to learn after all the years he had spent in gardening and botany—and that, besides, notices of some of the matters we alluded to had already been published. With our very limited means of reference we have failed to discover where—perhaps in botanical Transactions, or in the pages of some of the Irish farmers' journals, which devote a good portion of space to horticulture.

R. Fish.

THE MISTLETOE AND ITS PROPAGATION.

In your answer to "Felixstowe," page 376, you advise the cutting of the bark to insert the seeds of Mistletoe. With due respect to your authority in such matters, allow me to say that cutting or wounding the bark for the insertion of seeds of this singular parasite was considered as hurtful rather than otherwise to its growing many years ago, when the subject of its artificial propagation was first mooted in the gardening world; and I have seen more than one plant reared without any incision in the bark of the tree it was grown on some twenty-five years ago. You will, I am sure, pardon my giving the views then agreed on as the supposed ones by which it was propagated in a natural way.

We all know the sticky, pulpy character of the berry; and as birds are fond of it, the conjecture was that they only partook of the pulp, but, flying away after each meal, rid themselves of the stony seeds sticking to each side of their beaks or bills by rubbing them right and left against the limb of the tree they alighted on, and the seeds sticking where they left them grew there if the character of the tree favoured their doing so. Many, of course, being planted on unsuitable bark did not grow, and some failed by some mishap or other; but, of course, a part grew. Now, there is no reason to suppose that the birds punctured the tree to insert the seed, then why should we do so? in fact, the idea amongst practical men at the time I speak of was, that an incision hardened the bark and made it less agreeable to the Mistletoe than when left alone, and I may here record one instance in which I know of a contrary course being attended with success.

A seed or two of the Mistletoe was bruised a little and rubbed on the bark of an old Apple tree much moss-grown, but the seed was stuck on to the bark and not left to the danger of getting lost amongst the moss. Over the seed was tied a small bandage of thin muslin or crape, which remained on until it rotted off; this was to prevent the seed being disturbed by birds or other depredators, and nothing more was done. Time, patience, and a just observance of those laws which alike produce a Mushroom or a mammoth tree, furnished the Mistletoe plant in due course, and this was in a remote district many miles away from any known plant of a like kind. The process is a slow one, and the ardent propagator of the present day who turns out his new plants by the hundred the year after he receives the first cutting, would have his patience tried by the long time this parasite takes to effect a start. Its aftergrowth, however, was fast enough, and although I cannot say how far north this singular production flourishes, I can only say that some half dozen years ago I saw the finest specimens of it in Northumberland I ever saw in my life, and I have seen a good deal of Mistletoe in the orchards and plantations in the neighbourhood of London.

Unfortunately, I may remark that the habit of destroying it in the latter locality is against obtaining large specimens; besides which, heavy snows, high winds, and other casualties befall it, that specimens above a medium size are seldom met with. It seems to grow as freely on a Lime tree as anywhere; but here the winds break it sadly. The stouter limb of a Maple is safer; but old scraggy Thorns and Apple trees are its favourite haunts, and I think the Mountain Ash allows it to grow, and some other trees; but I have never seen it on an Oak, but have heard of its being found so located at Eastnor Castle, and one or two other places.

While on this subject, I may say that I believe no one has succeeded in grafting this plant on the Apple—a practice that was several times attempted at the time the seeds were tried, the slow progress of the latter tiring the patience of the less-persevering class of cultivators, to whose discoveries we owe so much and acknowledge so little.—J. Robson.

[We are very glad to receive this note and commentary; but there is no validity in the conclusion that because birds do not make holes in the bark to put Mistletoe seeds in, that therefore the gardener need not do so. Birds do not tie a piece of muslin round the branch to keep the seed from being displaced, yet our commentator found that desirable. The tongue of bark we recommended to be raised and the seed placed beneath it, answers the same purpose as the muslin. That the tongue of bark not being separated at its base from the tree, as in an inverted Λ, does not become hard we attest from experience; nor if it did would it be of any consequence, for the radicles of the seeds penetrate the inner bark underneath the raised tongue.—Eds.]

ANNIVERSARY MEETING OF THE ROYAL HORTICULTURAL SOCIETY.

The Anniversary Meeting of the Royal Horticultural Society was held on Tuesday, 11th inst., Sir C. Wentworth Dilke, Bart., Vice-President, in the chair. There was not a large attendance of Fellows, considering the number now on the list, but those who were present appeared to take a lively interest in the proceedings. Among those present, besides the members of Council, were Alderman Copeland, Alderman Wilson, Judge de Barres, Mr. T. B. Saunders, Mr. T. Walcott, Rev. W. Griffiths, Mr. Robert Osborn, Mr. W. B. Booth, Mr. Thomas Moore, Dr. Robert Hogg, &c.

After the advertisement for calling the Meeting had been read, Dr. Lindley, the Secretary of the Society, read the following Report:—

"A few short weeks ago the Council had looked forward to this Meeting as an opportunity for congratulating the Society upon the prosperous state of its affairs. Now, through the lamented death of H.R.H. the President, their satisfaction has given place to sadness and gloom.

"The Fellows are already aware of the promptitude with which Her Majesty, with characteristic disregard of Her own feelings, at a time when She was overwhelmed with grief, deigned to think of the Society, which [illegible] especially [illegible] of Her Royal Consort's [illegible]. The spontaneous promise of support which the Queen has so graciously extended to it calls for its most grateful acknowledgments.

"The Fellows have already been informed that, without loss of time, an address of condolence was forwarded by the Council to Her Majesty.

"A further most gratifying demonstration of the Queen's purpose to do everything in Her power to support the Society, and carry out the intentions of Her lamented husband, has since occurred. Fellows are aware that at the present Meeting it falls upon them to elect their President and office-bearers. Had Providence not removed their late President, it would have been the privilege of this Meeting again to elect him. In consequence of his decease, however, it became the duty of the Council to consider whom they should recommend to the Society for election in his place; and they deemed it becoming to endeavour to ascertain Her Majesty's wishes on the subject. With feelings of the deepest gratitude the Council learned that had it been compatible with Her high position, Her Majesty would Herself have condescended to fill the office.

"In proceeding, therefore, to the Election of a President, as required by the Charter, it will doubtless be the anxious desire of the Fellows to meet the wishes of Her Majesty, who has been pleased to recommend the Duke of Buccleuch to the Council, as the person whom, under present circumstances, it would be most agreeable to Her Majesty's feelings to see holding that situation. The Queen has also expressed Her desire that though unable Herself to hold the office of President, She may be kept as fully acquainted with the proceedings of the Society as has hitherto been the case.

"Such encouragement and support, hallowed by the motives which have actuated Her Majesty, must strike a responsive note in every heart. The Council feel sure that the Fellows of the Society will with one accord participate in their desire to join with their widowed Queen in carrying out Her lamented husband's plans, and so completing the noblest monument which the Society can offer to the illustrious Prince who did so much for it, and who had its welfare so thoroughly at heart.

"A statement of what has been done since the last Anniversary and of what remains to be done, will best show the Fellows how such intentions can be turned to practical account.

"The number of Fellows of the Society at the last Anniversary (1st May, 1861) was 1752. Under the new Charter the date of the Anniversary has been anticipated, in consequence of which only eight months are now to be reported on. During that period 1065 Fellows have joined, of whom 365 pay 2 guineas annually, 544 pay 4 guineas, 81 have compounded by the payment of 20 guineas, and 75 by that of 40 guineas. The total number of Fellows on 1st of January, 1862, had reached 2774, composed as follows, viz:—

10	Fellows paying retrospectively	1	guinea
23	" " "	3	"
6	" " "	2	"
716	" " in advance	2	"
215	" " retrospectively	4	"
915	" " in advance	4	"
384	" who have compounded by paying	20	"
555	" " " "	40	"

"At the General Meeting held on the 7th inst. 117 more Fellows were elected.

"The resignations and deaths during the past season have been only 42.

"It will thus be seen that whether the number of Fellows be looked at as a whole, or a merely comparative view be taken of the increase since the 1st of May last, there is equal ground for satisfaction. The List of Fellows also shows that, irrespective of rank or title, the Society has the honour to reckon among its members a large proportion of the most distinguished men of the day.

"Whilst the adhesion of so many persons of eminence has been highly gratifying, the Council have never forgotten that the real and proper scope of the Society is the advancement of Horticultural knowledge. In all their proceedings they have kept this steadily in view, and they trust that they may refer to the work done by the Fruit and Floral Committees; to the information contained in their published 'Proceedings;' to the many interesting and novel subjects exhibited at their Flower Shows, as well as to the extent and beauty of these Shows themselves; to the mission of their Collector to South Brazil, the returns from whom are already beginning to arrive; and to their ballots for seeds and plants, as proof of their efforts to sustain the high reputation of the Society in this respect. Further improvements have occurred to the Council, which, as opportunities offer and means arise, it is their intention to carry into effect.

"The statements of accounts appended to this Report being, in consequence of the alterations caused by the New Charter, only for a fractional part of the year—viz., from 1st May to 31st December, they cannot be looked at as a represention of the results of the year: nor can their elements be dissected and brought forward, as in past years, in contrast and comparison with previous years. It is the partial commencement of a new epoch, and must stand by itself as an imperfect record. From the same cause the accounts on the present occasion had to be prepared in a somewhat different form from that which has been previously employed. The Council had hitherto merely had to show the Society how its own individual accounts stood. It now has to produce a double set of accounts: one embracing the whole of its affairs, including those of Chiswick as well as South Kensington; the other confined to South Kensington. A separate account of the latter has to be kept for the Commissioners of 1851, as their rent depends upon the success of the Society. In the Appendix the accounts will be found stated in this double form. The first three accounts—called the Private Account, the Capital Account, and the statement of assets and liabilities—represent the affairs of the Society in its individual capacity. The fourth account, entitled the Revenue Account, has reference to the lease with the Commissioners alone. The accounts which will more directly interest the Fellows are those of Capital and Revenue—the Capital account as showing the amount of money which has been expended on the works in the Gardens, and the Revenue Account as explaining the ordinary working of the Society.

"On referring to the Revenue Account it will be seen that the chief source of income is derived from the subscriptions of Fellows. The Council feel that this is the mainstay of the Society, and that its prosperity must depend upon its possessing a sufficient number of regular subscribers to render it independent of accidents or occasional reverses. The account in this respect, although it does not yet realise all they expect, gives very satisfactory promise of its soon reaching such a point as will put them at ease regarding it. The total sum derived from the Fellows in all ways since the 1st May, 1861, has been £8767, but this includes £2373 paid for life compositions, which are capitalised or placed in a separate account, for the purpose of yielding a

ifteenth to revenue. What had been paid prior to the commence-
the lease was carried to the general funds of the Society. The above
also include the whole year's subscription up to the 1st May, 1862,
criptions having hitherto been payable at that date, and thus one
ubscription applies to expenses in two year's accounts. This un-
e complication is the consequence of the change in the period of
the yearly balance, rendered necessary by the New Charter, which
the accounts now to be balanced each year on the 31st December.
uncil, in order to remove this inconvenience, have requested Fellows,
g their next subscription, to pay only up to the 1st January, 1863, so
that date the accounts may start fair, the year's subscriptions and
r's expenses both running for the same period.

re is another complication which the Council are most anxious, if
, to remove. It will be seen in the statement as to the number of
and their different payments, that there is a certain number who
respectively. These are Fellows who were elected at that period in
ety's history when the subscriptions, instead of being paid in advance,
ot called for until after the Fellow had enjoyed a year's privileges.
g since this system was abolished, but 254 Fellows of the period
It would obviously be a considerable convenience in the working
ccounts if some arrangement could be effected with this exceptional
Fellows, by the individuals composing it voluntarily agreeing to be
n the same position as others. It would make no difference in the
to be ultimately paid by these gentlemen, because on death or re-
m their past year's subscription would have to be paid, which is not
with those who pay in advance.

next source of income is that derived from the public by means of
ions and promenades, &c. The table, No. 5 of the Appendix, shows the
obtained from this source during the past season, as well as the
r loss resulting from each occasion. No account is there taken of the
es of the staff, the rent of the place of exhibition, or other items
n a strict debtor and creditor account would require to be charged.
n after making allowance for this the result is satisfactory: with the
hment which the Society possesses (and must keep at any rate), these
ve entertainments have been provided for the Fellows not only with-
tting them to any extra expense, but actually at a profit of
7*s.* 8*d.*

Council would wish, where practicable, to make every separate
ment of expense in like manner contribute to its own support. That
the Chiswick expenses which is occasioned by the operations of the
Committee, they endeavour to diminish by the sale of the fruit and
bles reared for trial purposes; and it will be seen that £195 1*s.* 2*d.*
een received during the last eight months from this source. In
e way they would wish to make their publications contribute to the
producing them; and they intend that, like those of other eminent
s, their "Proceedings," &c., be sold to the public. With the view of
ng them more attractive, it is proposed that illustrative plates be
ally given.

the items of expenditure, the only one which occurs to the Council as
for comment is the interest on the debentures. This was originally
ent. Since the original bargain was made, however, the Society has
ed from the funds drawn from its Fellows, a sum of nearly £20,000
what has been borrowed, on permanent improvements to the Garden.
, 1859, when the loan was brought out, the number of Fellows was
9; now it is 2774. It therefore appeared to the Council that the
as come at which they might propose to the debenture-holders either
them off or to reduce the rate of interest to 4 per cent. Four-fifths
nsented to the reduction, many of them handsomely signifying their
al of the step. The remaining fifth has been paid off, by transferring
ds to fresh applicants.

e Capital Account shows the sums that have been actually paid for the
in the Garden; and in the Account of Assets and Liabilities will be
the additional sums incurred or expected to be due. A portion of the
e of the works is not payable until twelve months after their
on.

at part of the Garden Works, the execution of which falls upon the
, is nearly completed. The conservatory, the council-room, the ter-
the various terrace-steps, and terrace-walls, the band-houses, the
and canals, the Artesian well and water-works, the laying out of the
, are all finished or far advanced. The portico leading from the
l-room into the Garden, and the space adjoining it, has still to be
ed and finished. The walks are not so finely gravelled as is intended.
minor works originally contemplated are still kept in view, and
ly some addition may be made to the water-works. But of the actual
contemplated with the present means of the Society, the whole may
l to be very nearly completed. Those undertaken by the Commis-
of 1851 are not in so advanced a state. The decorations, both exter-
d internal, of the Arcades are in a different position from others, and
obably be the work of years. The decorations of the Garden are in
ne category, with this advantage, that in their case independent loans
fts can be received, while any gift that can be made to the embellish-
f the Arcades must be specially adapted to those buildings, and must
e shape of a work to be executed upon them or fitted into them.
ciety has already felt the benefit of these two sources of embellish-
Various works of art lent to the Society will be found decorating
rden, and some of the objects intended for the International Exhibi-
ll find their way into its precincts. Others of a higher class have been
ted to the Society, among which special notice should be taken of
ble works of art presented by Her Majesty, now placed in the conser-

e Fellows themselves have done more to furnish the conservatory
lants by their gifts than the Council by purchases. Many of these
great value and beauty.

e New Charter has rendered necessary a new body of Bye-laws,
will be brought forward for adoption at an early opportunity.

e arrangements for the year 1862 have been already circulated among
lows and need not here be repeated. The most important points re-
g them are perhaps—1. The arrangements with the Commissioners
for the issue of joint tickets, admitting the owners both to the Inter-
l Exhibition and the Society's Garden. The price of these has been
t five guineas. Fellows of the Society will, however, only require from
hibition Commissioners their ordinary three-guinea Season tickets;
. The arrangement with the Commissioners of 1851 for an entrance
Garden during the Exhibition season from Kensington Gore, through
mmissioners' ground behind the conservatory."

The Chairman, in moving the adoption of the Report, referred, in a few and appropriate observations, to the lamented death of the Prince Consort, who, had he lived, would on this occasion have filled the position which he (the Chairman) now so inadequately occupied. As stated in the Report of the Council, Her Majesty would herself have accepted the office of President of the Society, but her legal advisers had suggested that the duties of the office would be incompatible with those which she exercised as the Sovereign of the country. He (the Chairman) had had a few minutes' interview with Her Majesty, and she stated to him that she was most anxious to do all in her power to promote the prosperity of the Society. At the same time Her Majesty was pleased to suggest that the Duke of Buccleuch should be elected in the place of the deeply-lamented Prince, and which suggestion he (the Chairman) felt perfectly satisfied the Fellows of the Society would carry out. Referring to the Report of the Council, the Chairman expressed a hope that the 250 Fellows who had at present paid retrospectively would pay up as others had done. In the arrangements for the coming year the Society had announced not only three great exhibitions, but others of a minor character, with the view of attracting the public to the Gardens. The International Exhibition of Roots and Cereals to be held in October would, he believed, be a great success, and would not clash with the Exhibition of the Royal Agricultural Society to be held in June at Battersea; and various foreign countries, including Austria, Wurtemburg, Russia; and others had expressed, through their Commissioners, a desire to co-operate with the Society in the exhibitions. He then formally moved the adoption of the Report.

After several inquiries relating to the arrangements existing between the Society and the Commissioners of the Industrial Exhibition, as to admission from the Gardens to the Exhibition building, all of which were answered satisfactorily, Mr. Alderman Wilson seconded the adoption of the Report, which was carried unanimously.

In accordance with the wish of Her Majesty, the Meeting unanimously elected His Grace the Duke of Buccleuch President of the Society.

Dr. Lindley was re-elected Secretary.

The Meeting then proceeded to the ballot for the office-bearers of the current year. Lord Somers; Mr. John Fleming, gardener to the Dowager Duchess of Sutherland, Cleveden; and Mr. Robert Cooper, of Cooper & Bolton, Fleet Street, were elected in the room of Mr. H. T. Hope; Mr. Edmonds, gardener to His Grace the Duke of Devonshire, Chiswick House; and Mr. Robert Wrench, of J. Wrench & Sons, London Bridge.

REGULATING NEGLECTED WALL FRUIT TREES.

From the description your correspondent "F.," at page 374 of the present volume of The Journal of Horticulture, gives of his trees, I am afraid from all the shapes he can try, he will never have any satisfaction from them, unless he can grow them over again the very same way he would a common Laurel. I can with confidence recommend this plan with Plum trees. I never tried any other kind of fruit tree the same way, but if I had your correspondent's trees I would not hesitate to give one or more of each sort a trial. About three years ago I had charge of a lot of Plum trees, as perfect specimens of bad training as possibly could be, and almost barren. They were healthy, and I was unwilling to cast them away; and to let such grotesque-looking and useless rubbish remain as they were was out of the question. I cut a few of them within 6 inches of the ground, leaving 3 inches of the graft. They succeeded far above my expectation, every one put up a mass of shoots. I had to thin out a quantity of the small spray. I kept them regulated and fastened to the wall; in autumn I lifted them, and root-pruned them. This prevented too luxuriant growth the following summer, and they formed a number of nice little spurs on the first year's wood. I cut down a few more last year with equal success.—J. Angus, *Enniscoe.*

Trees Adapted for Sea-side Planting.—A correspondent, who has planted largely on the Norfolk coast, informs us that he has found the following trees succeed better than any others in resisting the sea blast:—Populus alba, P. nigra, P. angulata, P. macrophylla, Hippophae rhamnoides, Pinus pinaster, P. halepensis, P. brutia, P. laricio, P. maritima, Quercus Ilex,

Q. Lucombeana, Q. Cerris, Fagus sylvatica, Alnus glutinosa, Ulmus suburosa, U. montana, U. campestris, Acer pseudoplatanus, Ilex aquifolium; and that the common Oak, Lime, Horse Chestnut, Walnut, and Larch succeeded worst of all. —(*Essex Gazette.*)

TURNING OUT CUTTINGS OF ROSES IN POTS.

VINES IN PROPAGATING-HOUSE.

I HAVE 100 Roses in small three-inch pots, consisting of Bourbons, Teas, and Chinas, which I struck last autumn. I have them on a shelf in my propagating-house (which is cool just now). Now, having all my bedding stuff in it, and as I wish to get up a little heat soon to begin to propagate, and, consequently, shall require all the small pots I can lay hands on, would you recommend me to plant out the Roses now in a place where they could be sheltered with mats and hoops, if frost should come on? They are beginning to grow away.

My propagating-house is a lean-to 18 feet long, 10 feet broad, 5½ feet high in front, and 10 feet at back. In summer I grow Pelargoniums, Fuchsias, Balsams, and other common things. Could I do anything with Vines in it at the same time, with the temperature that would suit the plants above mentioned (natural heat), and what hardy sorts would you recommend?—A. McCALLUM, *Dumbartonshire.*

[We think in your position it would be best to turn out the plants as you propose, until the end of March. If the plants have a little ball and are turned out into rough leaf mould, they will never feel the moving. You might have three Vines in the propagating-house, and Black Hamburgh and Royal Muscadine would be best; but, of course, they will shade your plants in summer; but the Fuchsias and Geraniums might do as well under a protection of thin calico out of doors then. Balsams and other annuals would do well, and so would Fuchsias in the open spaces.

We cannot say more about expense than has already been stated. We presume that the expense of heating is what frightens your master, and your north hipped-roof of glass will increase that in your place. For such a ten-foot wall, and some 11 feet of a border, we put up a house this spring—height of front on posts, 3½ feet, the length 65 feet, the glass and the wood of which cost under £20. We are not certain as to the glazing and painting. All these things depend much on the neighbourhood. The wood was cut and planed by machinery, so as not to waste an inch, and the glass was 16*s.* per 100 feet.]

OSAGE ORANGE—INDIGOFERA DOSERA AND OTHER PLANTS.

I AM glad to see a north-country correspondent report the doings on the southern side of the border, and hope his inquiries will be duly responded to by some better able to give a reply than I am. As the district from which your correspondent writes (Cumberland), is far from devoid of interest, and for natural beauties, if not productions, is second to no county in England, the botanist, I believe, will regard the plants found on Helvellyn as important a feature in his herbarium as those gathered in the most fertile valley in the kingdom. And Fancy brings me back to the happy years of early life where, amongst other wild plants gathered amongst patches of snow on Cross-fell, one of the Lycopodiums of more than ordinary sturdy growth attracted my attention; I believe it was called L. selago, the specific name having long since given name to a genus. On the damp recesses of these mountains that interesting little plant, Saxifraga oppositifolia, is also found; but I was never so fortunate as to light upon it. But my purpose is not to describe the botanical features of this elevated region, but to express a hope that such correspondents as the one signing himself "GROUSE" will frequently report how gardening matters go on the land of hills.

Horticulture of a superior kind is certainly not confined to the counties bordering London or the densely populated districts; for I have visited many gardens in England, and some of them justly esteemed for their excellence, and yet I have never seen such a fine house of Orange trees as I remember seeing some thirty years or more ago at a gentleman's seat-house a[illegible] Time works wonders in many things and perhaps these Orange trees may have endured the vicissit
time; but if an onward course of prosperity has
they must now be noble specimens.

I am sorry I cannot give your worthy corr
advice on the plants he speaks of. I had some
gofera dosera, but they were so infested with
I threw them away. The Osage Orange I have
is certainly not worth the attention it was by som
to bestow upon it. Its bright shining leave
summer; but I have never seen the least inclina
ing, and in winter it much resembles a Goosel
tips only not being ripened. I have seen a tolera
of it, but not better than an ordinary quickset,
will not be so convenient when cutting time co
am not acquainted with Calceolaria violacea; bu
to be a species, I am sorry our hybridisers conf
to such narrow bounds. The old Calceolaria
deep purple-coloured variety, has long ago passe
vation. Perhaps some correspondent, like ou
friend, might run against it in some secluded
whoever finds this, or any other ancient curiosity
issue it again under its proper name, and not
the Gazania rigens was.—F. G. H.

ONE-SIDED STRIPED BORD

HAVING at page 401 described several plants
able for ribbon-border purposes, I herewith give a
of planting as much with a view of informing the
what not to plant as to give a successful example
given were not in all cases such as I would hav
abundance of other things been at hand; but
feature planted, when many of the more usefu
exhausted it became a matter of necessity to make
borders up of such things as could be had. I
just as they were planted, with all their failings po
is also proper to say, that the borders here mentio
one feature—*i.e.*, one-sided, facing a walk, in mo
of alternate Dahlias and Hollyhocks formed the
situation being certain walks crossing the kitchen
in the cases where the front edging was compo
variegata, that plant is a permanent feature the
convenient distances apart spanned the central wa
were trained some fancy Gourds. The striped bor
both sides, and the changes of planting only oc
there was a stop or break in the walk, this rough
suffice to explain all that is necessary in a general
give the examples, all of which consisted of four r

No. 1.

1st row, Arabis variegata, yellow and green.
2nd row, Geranium Tom Thumb, scarlet.
3rd row, Calceolaria viscosissima, yellow.
4th row, Dwarf Dahlia Zelinda, purple.
Dahlias and Hollyhocks at back.

This arrangement was pretty good, the plants
uniform rising bank, and when in flower looked
dry weather in August told on the Calceolaria and
towards the end of that month, still the arrangem
well be improved.

No. 2.

1st row, Arabis variegata.
2nd row, Geranium Lucidum major, pink.
3rd row, Calceolaria rugosa, yellow.
4th row, Dahlia Zelinda, purple.
Dahlias and Hollyhocks as before.

This was very indifferent, the Geranium out-gro
ceolaria, and to have reversed these would have pl
ceolaria by the side of a variegated plant, the Ge
planted in mistake for a dwarfer one of the same
the Calceolaria instead of C. salviæfolia spoiled this

No. 3.

1st row, Arabis variegata.
2nd row, Gazania rigens, orange.
3rd row, Perilla nankinensis, maroon.
4th row, Chrysanthemum regale plena, yellow.
Dahlias and Hollyhocks as before.

If General Tom Thumb had been planted in
Gazania, this would have looked very well. As it was
was too low and not enough of flower on it to fit it
border plant. The Perilla and Chrysanthemum answ
together.

No. 4.

1st row, Arabis variegata.
2nd row, Geranium Blazer, scarlet.
3rd row, Geranium Boule de Neige, white.
4th row, Perilla nankinensis.
Dahlias and Hollyhocks as before.

When the Geraniums were in flower this looked not amiss, but there is never sufficient bloom on a white Geranium to rank it as a white plant. A variegated one would have been better if it were tall enough. In heights, those planted did very well, but in a ribbon-border a distinction of plants seems as requisite as difference in the colour of the flowers. The above was, therefore, not good.

No. 5.

1st row, Arabis variegata.
2nd row, Lobelia, a pale blue variety.
3rd row, Calceolaria salviæfolia, yellow.
4th row, Salvia fulgens, scarlet.
Dahlias and Hollyhocks as usual.

This not amiss, only the Calceolaria suffered during the dry weather, and ceased flowering entirely after the middle of September, the situation being drier than that of most of the others. The Lobelia, a strong-growing one, flowers well from June to November. Salvia does pretty well.

No. 6.

1st row, Arabis variegata.
2nd row, Calceolaria Prince of Orange, intermediate colour.
3rd row, Verbena Purple King, purple.
4th row, Geranium Cerise Unique, rosy scarlet.
Dahlias and Hollyhocks as before.

This very good while the Calceolaria was in flower, which was a considerable part of the summer; but like the Calceolaria in No. 5 it began to fail when prolonged dry weather told on it. This example presented as great a mass of bloom as any, and the plants kept pace with each pretty well.

No. 7.

1st row, Arabis variegata.
2nd row, Geranium Shrubland Pet, red.
3rd row, Geranium Flower of the Day, variegated.
4th row, Perilla nankinensis, maroon.

This looked very well, and it is very creditable. Both the Geraniums have ceased flowering, but the contrast of the small Oak-leaved variety, Shrubland Pet with Flower of the Day is excellent, and the latter backed by Perilla presents a better appearance at the present time than any other example of the kind. The fact is that Variegated Geranium and Perilla are the very best plants out for striped borders.

No. 8.

1st row, Arabis variegata.
2nd row, Calceolaria bicolor, yellow and brown.
3rd row, Verbena Purple King, purple.
4th row, Geranium Triomphe Mont Rouge, pale-flowered.

The Calceolaria being a half-herbaceous one did not keep up that succession of bloom necessary for prolonged beauty, and the pale flowers of the Geranium were never at any time numerous enough to entitle it to distinction. The Verbena did very well, but altogether the example fell far short of that of No. 7 for general effect.

No. 9.

1st row, Double White Pink.
2nd row, Geranium Lady Holmesdale, a pink variety.
3rd row, Calceolaria integrifolia, old yellow.
4th row, Ageratum mexicanum nanum, pale blue.
Dahlia at the back.

I expected the Calceolaria would have kept pace with the plants on both sides of it, and it did so for some time, but eventually the Geranium overtopped it; and the Ageratum and Geranium met by the end of September forming not a bad contrast. The permanent feature of the pink plant is not bad as a front plant, and had Calceolaria viscosissima occupied the place of C. integrifolia, this would have been one of the best examples, but I only obtained the last-named Calceolaria last year; and, believing it as the old original species to be likely to do better in dry seasons than the improved varieties now in use, I planted it as above on trial and have been miserably disappointed.

In conclusion I may say that the bulk of our Variegated Geraniums, Cineraria maritimas, and Variegated Alyssums, was planted in more important places than those given above, and formed some better examples in the striped-border way, which will be described hereafter, and most of them look well up to the present time. I hope some other planters will favour us with the result of their experience in this line, and also give some cases where the flowers face both sides, forming a ribbon-border of what we may call a span-roofed description, instead of those of the lean-to kind which I have given; but as I have several of the others of from 3 feet to nearly 20 feet wide, all more or less good, which, however, may be described in a future article.

J. Robson.

LONGFORD HALL.

(*Continued from page 354.*)

Returning from the Cucumber-house I passed the potting and tool-house 50 feet long by 17 feet wide. No expense has been spared to make this as complete and useful as possible. The roof is nearly all glass, thus making it so light that the gardener has put up a stage on one side and placed on it a considerable number of store-pots of bedding-out plants—such as Scarlet Geraniums, Calceolarias, &c. The frost is kept out by a double row of hot-water pipes. The boiler and fireplace for it are in a separate shed, so there is no gas arising from the hot ashes to injure the plants or the lungs of the young men when engaged in potting. This house is so spacious that there is plenty of room for benches, soils, and plants, when potting is being done. The tools are arranged in different compartments, with inscriptions on each to show where each kind of tool should be placed—such, for instance, as hoes, rakes, riddles, baskets, scythes, shears, hammers, &c. In the centre I noted a placard in large letters announcing the rule, "A place for everything, and everything in its place." And on another—"Clean your tools." Altogether I cannot help considering this potting and tool-house the best I have ever seen. The principle of order, even in places comparatively out of sight, must instil that idea into the minds of the young men employed there never to be eradicated hereafter.

Adjoining this house there are a cooking and eating-room for the men, and adjoining that a spacious fruit-room 75 feet long and 17 feet wide. The fruit is laid on trellised shelves all round it, and appeared to keep very well. Some Nonpareil Apples were particularly good. To prevent damp arising, the floor has had a covering of asphalt laid on it, which makes an excellent floor indeed—not only in keeping the room dry, but also preventing rats and mice from harbouring there. Next to this noble fruit-room are the lodging-rooms for the under-gardeners. I peeped in through an open window, and observed that they were a good size and well furnished, very different to the bothys I was lodged in when I was an under-gardener. Many a larger place might copy from this example, and thus improve the comfort and health of the young men employed in the gardens. At the other end of this range of rooms and sheds there is a long, wide, open shed for to dry soils and keep garden-pots, wheelbarrows, and mowing machines and rollers. This is much better than placing such cumbrous tools in the open air, as is too generally done.

Near to this open shed is the entrance to the Mushroom-house. Corresponding with every other department, it is of immense size—namely, 156 feet long and 13 feet wide. This house is, in fact, a vault arched over with bricks. There are three shelves on each side. When I called there early in January, the three shelves on one side were entirely filled with Rhubarb roots, which were producing fine stalks as thick as they could stand. On the lowest shelf, or rather ground floor, I noted that it was devoted to forcing Sea-kale. The remainder of the shelves was occupied with Mushrooms, which were coming up in great profusion. This house is lighted with gas, when light is needed. It was lighted when I saw it, and it had certainly a novel and striking effect. The beautiful pink and red stems of the Rhubarb and the white-capped Mushrooms, seen by a double row of gas-lights, was a truly singular and pleasing sight.

Such a place for forcing Rhubarb and Sea-kale is far superior to the common method of forcing by covering the crowns with pots, and then covering the pots with a piled-up heap of stable-dung or leaves—both unsightly objects in a well-ordered garden. From this interesting place I walked to two pineries placed at the east end of the range of vineries and Peach-houses at a right angle with them. They are span-roofed, placed side by side, are each 63 feet long and 17 feet wide. The first is devoted to succession plants, and the other is a fruiting-house. The path of the first is in the centre, and on each side are two pits. The bottom heat is attained by hot-water pipes running under the pits in a chamber, and over them is a floor of strong slates, or, more properly, thin flags. The plants are grown in pots, and are plunged in a bed of sand, which is considered far superior to bark, being more lasting, less troublesome, and affording no harbour for worms and woodlice, and besides these advantages it has a neat and cleanly appearance. To give top heat the pipes are laid on each side of the walk, and that is found quite sufficient to heat the house sufficiently for succession Pines. In the fruiting-house the pit is in the centre, and the paths run on each side, and the pipes to give top heat are next to the walls. They are covered with bricks set on edge, with pigeon-holes to let out the heat, and on the top is a stone shelf, on which I saw a large number of Vines in pots now breaking, and showing plenty of bunches, which are uniformly reduced to ten bunches on each Vine. Mr. Adams considers that a sufficient number, and I think so too. Most gardeners would be thankful for such a number on early-forced Vines in pots. Between the Vines I saw Kidney Beans in pots in flower.

The fruiting plants stand in five rows, twenty-five in a row, thus giving one hundred and twenty fruits, of which number one-third at least were in fruit in different stages of growth. Some Montserrats were just ripening, and were well-swelled, handsome fruit. Of that handsome large kind, the Black Prince Pine, I saw several nearly swelled up to their full size, finer fruit I never saw at any season. These two Pine-stoves are the best for the purpose I have seen anywhere. To a gardener who loves Pine-growing, the sight they afford is worth going a long way to see.

Crossing the kitchen garden, which is about two acres in extent, we come to the pleasure-ground. To the right is a lofty wall, built, no doubt, to hide the back buildings attached to the mansion, and in front of that wall is a raised broad terrace covered with glass. It is 130 feet long and 8 feet wide, forming a pleasant promenade in wet or cold weather. Next the front glass there is a platform, and on it I noted a row of young specimen Heaths and New Holland plants. Somebody has displayed a considerable amount of skill and patience in training these plants. I have seen young specimens preparing to make exhibition plants by most of the successful exhibitors at the metropolitan shows, but even these experienced hands could not have done their plants better than those I saw in this promenade. At the end of it I came to a large glass-covered structure 66 feet long by 44 feet wide. The roof is what is called ridge-and-furrow—the only way by which a large space of ground can be covered with a uniform height of roof. This house is to be furnished with fruit trees in pots, which will render it, in fact, an orchard-house. It is adjoining the conservatory, and that adjoins the mansion: therefore, to make it look pleasant at this time of the year, it is partially filled with large Camellias, Orange trees, standard Bays, standard Laurustinus, and such like. Near the border of the walks I noted forced flowers, such as Crocuses, Hyacinths, Lily of the Valley, and Chinese Primroses. Here, again, the Vine is not forgotten. Every pillar has its Vine, and every Vine has made strong wood. In the season there must be an immense weight of Grapes produced at this place.

The conservatory is one of those lofty buildings erected more as an architectural embellishment to a dwelling than a fit habitation for plants, excepting for creepers and climbers—for such plants no place can be better. To furnish such a conservatory a large quantity of plants grown in other houses is necessary. Here I noted most excellent Chinese Primroses of the fringed varieties in full bloom, also good Cinerarias, and other winter-blooming plants. Camellias well set with bud were just beginning to expand the most forward, and in a short time will be covered with bloom.

I certainly enjoyed this visit to Longford Hall gardens, and trust my description will interest the reader as well as I was in recording what I observed there.—T. APPLEBY.

THE SLIPPERY ELM.—One of the most valuable, as it is a well-known article in our country (says an American journal), is the Slippery Elm (*Ulmus fulva*). All our apothecaries keep it, both the flower and the bark. It is generally called either the Slippery Elm, Red Elm, or Rough-leaved Elm. It is indigenous to our clime, and what is remarkable (though but little known), it contains a great amount of human nourishment. It · medicinal also. It is an excellent substitute for water, and ou can carry in your waistcoat pocket sufficient to subsist on -r "ten days." The shipwrecked sailor, the soldier in Mexico, -d the traveller in the prairies, should never be without it. It always mitigates hunger, and is nourishment and drink. Let no ship go to sea without it—no traveller fail to carry it with him — or army march without it.

SUMMARY OF METEOROLOG

OBSERVATIONS.

HORTON HALL, BRADFORD, YORKSH

(Latitude 53° 47′ 36″ N., longitude 1° 44′ 47″ above the sea level 496 feet.)

1861.	Barometer.			Thermometer.									Hygrometer.									Rain.		Prevailing Winds.							
				In the shade.									Indication at 9 A.M. Local time.																	
	Mean reading.	Extreme highest.	Extreme lowest.	Mean max.	Mean min.	Mean.	Above (...) or below (—) the average.	Extreme highest.	Extreme lowest.	Highest in sun's rays.	Lowest on grass.	Earth 1 ft. deep. Mean.	Mean temp. of evaporation.	Mean temp. of dew-point.	Mean degree of humidity (Sa. = 100).	Rain fell on.	Snow fell on.	Hail fell on.	Fog prevailed on.	Frost prevailed on.	Amount of cloud 0—10. Mean.	Amount.	Above (...) or below (—) the average.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
	Ins.	Ins.	Ins.	°	°	°	°	°	°	°	°	°	°	°	°							Ins.	°								
January	30.112	30.416	29.120	39.1	31.0	35.1	—1.5	55	12	59	7	36.3	35.0	33.5	91	7	7	...	7	13	7	1.08	—0.98	2	4	2	4	2	9	7	1
February	29.763	30.684	29.184	43.9	34.5	38.9	...3.3	53	17	68	12	39.2	37.0	34.4	84	15	5	1	3	6	5	5.08	...4.87	...	5	1	5	...	10	5	2
March	29.681	30.286	28.896	48.9	33.3	41.4	...1.1	57	29	71	24	41.3	39.2	35.8	84	25	7	6	3	5	5	6.50	...4.82	1	1	1	...	3	7	10	8
April	30.016	30.503	29.700	52.5	34.4	44.6	—3.2	61	28	86	22	42.3	41.0	57.5	77	10	1	...	2	3	5	1.41	—0.12	2	8	1	7	1	2	3	6
May	30.082	30.410	29.601	61.2	41.0	51.1	—1.7	73	27	96	22	49.3	47.6	41.2	64	7	1	1	...	4	4	0.84	—1.62	4	3	3	2	...	1	13	5
June	29.784	30.109	29.360	67.6	50.4	59.0	=0.0	80	43	110	41	56.5	58.2	53.8	72	13	...	...	...	...	4	1.90	—0.57	4	3	2	3	4	4	2	8
July	29.621	29.990	29.106	66.1	51.1	58.6	—2.5	73	42	101	38	58.6	57.9	55.8	82	25	...	...	...	...	5	3.63	...0.65	...	...	...	3	4	12	2	10
August	29.931	30.250	29.421	65.5	53.1	59.9	—2.9	76	46	111	42	59.8	58.8	55.5	82	15	...	...	...	...	4	1.13	—1.21	...	...	...	...	2	14	15	...
September	29.820	30.180	29.080	61.8	47.5	54.6	—1.1	76	38	97	32	56.2	51.8	50.6	80	16	...	...	5	...	5	4.43	...2.29	1	...	...	...	8	4	9	8
October	29.945	30.381	29.276	56.5	44.0	50.2	...0.7	68	33	78	28	50.5	48.8	45.9	86	11	...	...	9	...	5	0.99	—2.01	1	5	1	4	8	8	3	1
November	29.653	30.366	29.982	44.6	33.3	38.9	—3.6	54	20	58	16	42.5	37.4	34.8	84	18	5	1	...	12	5	4.67	...2.51	1	3	...	2	1	10	8	5
December	30.074	30.580	29.160	41.7	33.6	37.6	...1.3	55	18	62	16	41.4	39.1	35.8	91	14	...	...	9	9	5	2.39	...0.83	2	1	1	12	1	6	5	3

January.—This month up to the 21st was col
markable for extremely low night temperatures; o
for twelve of the first twenty-one days the ther
mean ·ading 31° whilst the nights were only 4°

The rainfall was nearly 1 inch below the average, and the greatest amount that fell on any day of the month was ·68 inch on the 1st. The mean temperature was 3°·4 below that of January, 1860.

February.—A remarkably wet month; 1·07 inches fell on the 8th, and 1·98 inch of rain and snow fell on the following day (9th), which, along with what fell on thirteen more days of the month, was the wettest February experienced in this locality during the last twelve years. Notwithstanding the unprecedented amount of rainfall, the moisture of the atmosphere was not so great as January was by 7°, perhaps owing to the unfrequent prevalance of fogs. The mean temperature was 8° warmer than February, 1860. On the evening of the 21st, and morning of the 22nd, a very strong wind prevailed; it came from S.W., and had a force of 20 lbs. on the square foot.

March.—This month was the wettest ever recorded here. It rained more or less on every day except six days, and snow fell on one day when no rain fell, therefore, there were only five fair days; hence the proverb of the ancient sages was verified:—

"A bushel of March dust is worth a king's ransom."

A thunderstorm passed over without heavy rain on the 5th, but 0·18 inches of hail fell; it rose from the west, and, what was most remarkable, a strong gale was blowing at the time. The heaviest amount of rain fell on the 4th, — 0·94 inches. The mean temperature was 3° higher than March, 1860.

April.—A fine month, but very little rain, frost, or extremes of heat or cold were experienced. The days were colder than usual, and the nights warmer—frost prevailing on three nights only; nevertheless, the mean temperature was 2°·4 above that of April, 1860, but the temperature of the earth was 1° below the average at 1 foot deep.

May.—This was a dry month, the driest of the year. (Query, Is May generally the driest month of the year?) The rainfall was deficient by rather more than 1½ inch, and the greatest amount that fell on any day during the month 0·18 inch on the 25th. The mean temperature was exactly equal to that of May, 1860, being 1½° below the average.

June.—A grand contrast to June, 1860—a temperature equal to the average. The days 6° warmer, nights 4° higher, besides 4·95 inches less rain, and more than double the sun or less amount of cloud than June, 1860. The rainfall was half an inch below the average; and although thunder was heard, on one, lightning was seen but no thunder heard on three, and thunderstorms occurred on three days of the month, yet the greatest fall of rain was only 0·48 inches on the 21st.

July.—A fine month on the whole, but not equal to the average. The mean temperature was 2½° below the average, and only 1° warmer than June, 1860. Rainfall half an inch in excess of the average, and that which did fall fell not in large quantities, but in small portions at a time; so that the month was showery, not wet, and every way a month that promoted growth.

August was a fine month. However, the temperature was 2½° below the average; but the days were 4° warmer, and the nights 3½° than August, 1860. The temperature of the earth was 2° below the average. There was also a deficiency of the rainfall.

September.—The amount of rain was 2 inches above the average, and rather more than half an inch fell than had done during the last twelve years. The greatest amount fell on the 6th—1·05 inches. More rain fell this month than in the corresponding month of last year by 1·98 inches. The temperature, however, was more genial—it was 4° warmer than September, 1860.

October.—The driest and warmest month during the last twelve years. There was a thunderstorm on the 11th, when 0·41 inch of rain fell. The month was 3° warmer on the days, and 2° at nights than October, 1860.

November.—The wettest November since 1852, when 6.54 inches fell, or nearly 2 inches more than fell this year. The days were 2° warmer, and the nights 8° colder than November, 1860: therefore, the mean temperature this year for November was 1° colder than November, 1860, and 3° below the average.

December. — This month was 4° warmer than December, 1860. Less rain also, by 1·15 inches. On the whole a seasonable month.

The year was an average one, excepting the rainfall was considerably above the average; but there were less rainy days by thirty-seven this year than there were in 1860, and 4·42 inches less rain fell. The range of temperature this year being 68°, whilst that of last year was 71°.—GEORGE ABBEY, *Gardener, Herton Hall.*

ICE-STACKS VERSUS ICE-HOUSES.

WORTHY Mr. Robson seems to think he has vanquished the ice-stacking party—successfully combated the principal issue to the attainment of which their stacking led: therefore I feel bound, by the very defensibility of the mode as propounded by me in page 335 of this Journal, to buckle-to in the pleasing task of endeavouring to further elucidate a subject which has called forth a greater number of friendly combatants than any subject in my memory has done for some time past in this highly instructive progressing Journal. A house upon the principle of the one at Lord Jersey's, as recently illustrated by Mr. Bailey of Nuneham last week, is an entire embodiment of my views on ice-keeping below ground. I knew the house well when the late lamented Mr. Butcher lived there; and what is there in those views of ice-keeping below ground that is not embodied in my views on the same subject above ground, save that I am a more liberal advocate of what are there called the necessary requirements to success?

Mr. Robson having so gallantly taken his stand upon our (the ice-stacking party's) ground, we will endeavour, as we feel bound, to defend our views in as moderate a manner as possible. And first, permit me to correct an error, Mr. Robson having misunderstood my article when he concludes that I mean the walls to be made with best wheaten straw. I believe I there stated that any old thatch would do, presuming the reader would draw the inference that any straw not being too rotten would do. Were I going to construct another stack, I should prefer barley straw thrown in indiscriminately. As regards being straight, I only wish to have wheaten straw immediately between the ice and hurdles, simply because there it would be more or less wet, and the stronger the straw the better would it withstand the same. I do not wish the outside of the straw wall to be thatched. I simply mention, Throw a little straw round the outside—my object being to have a good thickness of straw thrown on the stones (the drainage for air and water), to keep the air from entering too directly upon the ice. For instance: If the platform I mentioned be formed of stones, to support these stones (a quantity of them will roll beyond the limits of the square), you require the straw within the hurdles upon the edge of this platform. If not quite sufficient, I would lay a ridge of straw all round, leaving a foot or two of the farthest stones there to admit the air.

I have above expressed my views with reference to the better way of keeping ice without regard to economics; my object in my late article being, as I before stated, an endeavour to extend the number of those who preserved the same. But I will take Mr. Robson's views, and refer to them under the several heads he lays down. First, *Convenience.* It must, I think, be more convenient to tip a load of ice direct into its bed, there to break and ram it, than to tip it down outside of the door of the old ice-houses, there break it in (if the slightest thaw) the dirt outside the door, thence wheel it in through the passage afterwards to ram it down. In getting a barrowful with Mr. Robson last week, I quite expected he would have taken a fork with him to remove the litter from the surface of the ice, my never having seen ice placed in a house without a lining of straw all round and over it, the same having to be removed, as in my stack, each time ice was required, not in such quantity—yet the fingers, as a rule, had to be used when the thickest was removed, to draw a mass of wet dirty straw off the surface. It is useless for us practical men to refer to the trouble of removing 2 feet of straw as being an object. The fork is in, and the ice laid bare, clean, and almost dry in the time it takes to light the candle for the house alone. A couple of barrowfuls are got and the straw replaced most easily in ten minutes. Again, we have here as extensive an establishment as any, with the exception of almost regal palaces. Things are kept always upon ice, having no less than three refrigerators in constant use. This I could not do were I dependant upon our so-called old ice-house in the wood, as it is at present constructed.

When writing my original article upon this subject, I considered that even the humblest homestead could furnish the materials necessary for my rustic ice-preserver; yet I will not rest its claims upon this, but will proceed to draw practical consequential propositions upon the relative cost of the two I will not attempt to explain the expenses attendant upon the old ice-house, but will take Mr. Robson's primitive quotations as to the quantum of bricks alone required—namely,

5000 at 38s. per 1000 ....£9 10s.

On the other hand, for making an ice-stack—

4 posts	£0 10
20 hurdles at 1*s*. each	1 0
2 loads best wheat straw for thatch	3 12
4 loads coarse wheat or barley straw for hurdles	4 0
	£9 2 *Ans.*

For £10 I should be enabled to build a most efficient one of the sort. But, as I before remarked, the whole can be had upon even a farm of any pretension whatever. And I state emphatically that here the expense ends, other than perhaps a load of wheaten straw once in seven years. It does not require making afresh every year. The load of straw, which is necessary in every ice-house, when the ice is all used it is placed upon that already within the hurdles, and that one load each successive year is all that is wanted. As no wet can get to the materials, they last an indefinite time.

In my deductions herein I have kept strictly within the limits of practice, and I hope not without an object. The materials are within the reach of all, as above; the labour is little—the best explanation is *a trial.*

In conclusion, I beg to express my high gratification at the tone of the correspondence upon this subject. Mistakes have been rectified, and opinions opposed with the most unmistakeable good feeling. Herein consists the pleasure of communicating our views to others.—W. EARLEY, *Digswell House, Welwyn.*

SETTING THE BLACK DAMASCUS GRAPE.

SOME gardeners find a difficulty in getting the Black Damascus Grape to set well—so much so, that they have been communicating their failures to various gardening periodicals, and some, from their succession of failures, intend to eradicate it from their collection altogether. Mr. Dick, gardener to Lord Vernon, Sudbury Hall, finds no difficulty in getting it to set well. He had some beautiful bunches on a young Vine last year, with large, regular, well-shaped, well-coloured berries. Mr. Dick keeps rather a dry atmosphere, and gives the bunches one or two slight shakes when they are in flower, which disturbs the pollen, and thereby assists nature in communicating its fecundating principles to the stigmas. If done at the right time, equal-sized berries and symmetrical bunches will be the result.—G. U. R. J.

[Your other communication we hope to publish next week.—EDS.]

SOWING MISTLETOE SEED.

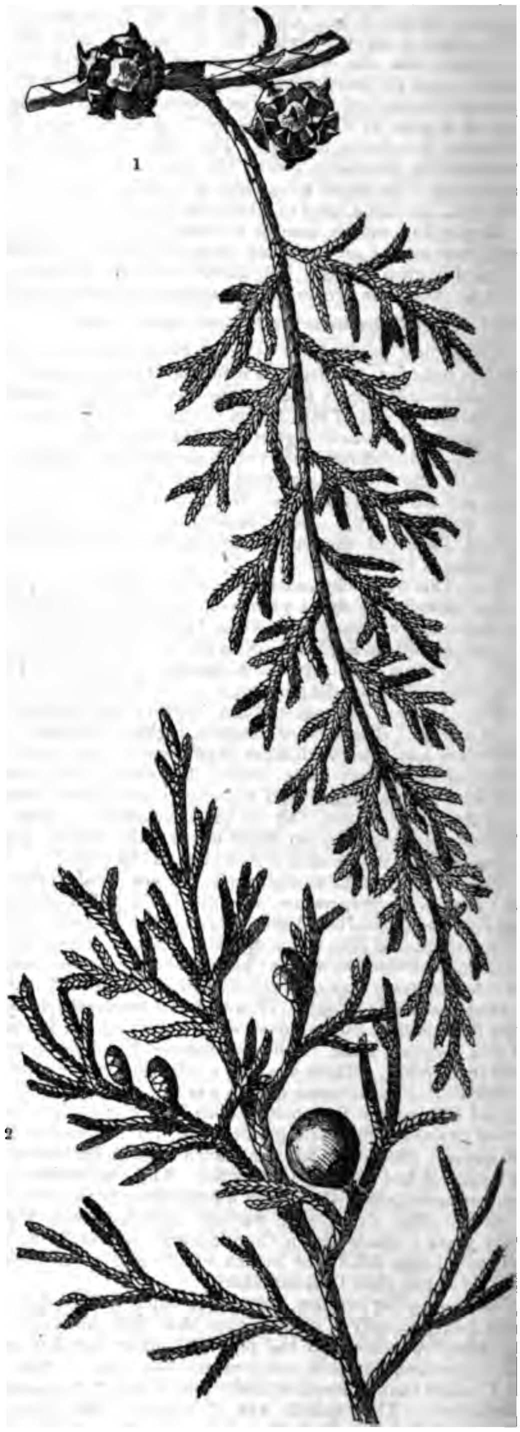
IN reference to your advice respecting the propagation of the Mistletoe, I have tried the plan recommended—namely, tongueing the under part of a branch of an Apple tree, and inserting the seed several times without succeeding. I have also embedded the seeds in green moss, and bound them with matting round the branches with no better results.

It seems to me that the Mistletoe is indigenous to certain localities. I am led to this conclusion from the fact that in the adjoining county, Somerset, it is plentiful almost to a nuisance, yet in this part of Devonshire I do not know of a single plant, and so great is the desire to obtain specimens that I am quite sure young Apple trees with the Mistletoe growing thereon would command a ready sale at good prices.—JAMES NICHOLLS, *Tavistock.*

ORNAMENTAL CONIFERS.

CUPRESSUS FUNEBRIS (Funebral or Weeping Cypress).—*Nat. Ord.*, Pinaceæ, § Cupresseæ. *Linn.*, Monœcia Monadelphia.—A large evergreen coniferous tree, perfectly hardy, and extremely elegant in its growth. Mr. Fortune describes it as having a perfectly straight stem 60 feet in height, with branches growing at first horizontally, then taking a graceful curve upwards, the points drooping like a Weeping Willow. These weeping branches are long and slender, giving to the entire tree an extremely graceful weeping form. The branchlets are two-edged, much branched, Fern-like in appearance, covered with bright green adpressed leaves, closely imbricated, in four rows. This tree will be particularly valuable for "park scenery, lawns, the entrance to suburban villas; and an appropriate ornament to the resting-places of the dead." From Chinese Tartary, introduced in 1849, by Mr. Fortune.

JUNIPERUS SPHÆRICA (Globe [illegible]).—*Nat. Ord.*, Pinaceæ, § Cupresseæ.—An evergreen tree, said to grow from 30 feet to 50 feet in height. The branches are clothed with scale-like obtuse leaves, arranged in four rows, and having a circular pit at the back; the young branches are usually very slender, and four-cornered from the regular disposition of the leaves. The fruit is quite spherical, glaucous, shortly pedunculate, and about half as large as the ball of a pocket pistol. From the north of China. Introduced by Mr. Fortune in 18[illegible].

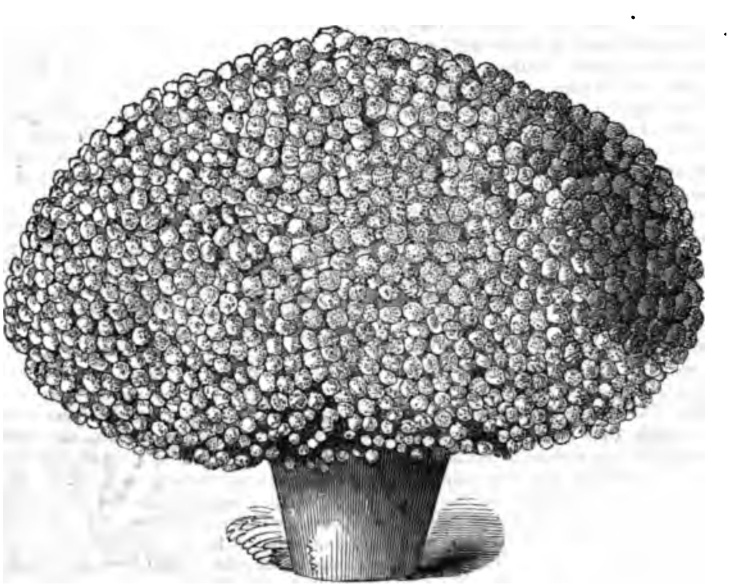


1. Cupressus funebris. 2. Juniperus sphærica.

PIMELEA CULTURE.

E genus Pimelea is a small tribe of evergreen shrubs, all s of New Holland. They may all by culture and training own and formed into beautiful specimens, both for ornang the greenhouse and conservatory and also for exhibition ses. However, the two species most used for the latter se are Pimelea Hendersonii, with rose-coloured flowers; . spectabilis, which has a large compact head of white s. The last-named is the freest to grow, and, consequently, rdiest species. Many a country gardener who runs up to on once a-year to see one of the great metropolitan shows , no doubt, be glad to know how to grow similar specimens h, for instance, as the annexed engraving represents. of our readers who may never have seen such a plant may sured that it is a faithful picture taken from a plant then and flowering as freely as the engraving shows it. The of it is Pimelea spectabilis.

w, an ingenious thoughtful cultivator desirous of trying to a similar specimen, would first inquire, What soil does it e? Next, How and when am I pot it? Then, How shall I to train it so as to cause it to assume such a form? Then, watering, Does it require abundance constantly, or more time than another? Further, What heat does it require? astly, Please tell me the summer general management and inter treatment? All these reasonable queries I will vour to answer, trust the treat- I shall describe ad some of my er brethren to d persevere till ucceed. Many, all the great tors, are self- t men in the art wing specimens. e seen them at in summer evenill dusk training young plants, g it their reon and delight, ng their leisure in this innocent ment. It was hem a labour of nd so it must be very grower atng to grow speci-



Pimelea spectabilis.

first thing to ught of is to e the plants. I by all means to young plants, der them of a able nurseryman who has a good stock to choose from. er point attend to—procure at least two plants, though ould not be too many. The reason for this is, one might Have then, at least, two strings to your bow.

.—The proper soil for a Pimelea is two parts fibry peat, ed from a dry moor where Heath grows plentifully (choose possible, as is of a brown not black colour; if it is mixed arp white sand so much the better); one-part turfy loam n upland pasture, which will require laying in a heap for to kill the grass or other weeds that might be in it. Add e a regular mixture of charcoal or small pieces of sandor even broken pots. These last are chiefly for the purf making the soil porous, so as to admit water readily to e the whole of the soil in the pot. If the compost is defi- sand, add also a liberal mixture of what is called silver At the time of potting mix all these well together. Pull es the peat and the loam, but do not sift the compost ng for young plants, and even for them use no finer a an one with three-quarter-inch mesh. Then have ready tity of broken pots in three sizes, the largest to cover the , the next to lay upon them, and the last next the compost. t a few of the roughest pieces of the soil and lay them drainage. The pot is then ready for the plant, which brings me to the operation of potting. Choose a pot at least one inch wider than the old one, and let it be quite clean.

Potting.—The best time for repotting is early spring, as a general rule—say from the middle of March to the beginning of April. Let the compost be moderately dry, and also the ball of soil in which the plant is growing. Turn the ball carefully out of the pot, and pick out nearly all of the old drainage, being careful not to bruise or break the roots. Should any be dead cut them away to a living part. Rub off some of the old soil, especially that on the surface. Then place some compost in the pot just sufficient to raise the ball level with the rim of the pot, fill in round the ball with the compost, pressing it down firm but not hard as it is put in. Fill up to the rim, and then give the pot a smart stroke or two on the bench, that will cause the soil just to sink low enough in the pot to hold sufficient water to wet the ball. Press the soil down again, level it, and leave it neatly finished. Then give a good watering and set the plant in its place not far from the glass. Young vigorous plants may very probably require a second shift about July; but the health and growth of the plants will be the guide as to this second shift the same year. If it has made great growth, then it will bear a second shift; but if it has not made great progress, then let it remain till spring comes round again. Large plants will require a larger shift in proportion. A plant growing in a six-inch pot should be potted into one eight-inches diameter, and one in an eight-inch pot into an eleven-inch pot.

Training. — If the plant has only one straight shoot, nip off the top 5 inches from the soil for the purpose of giving it a short stem about 4 inches high, clean of branches. Such a dwarf standard is preferable to one with shoots close to the soil.

This stopping should be done shortly after the plant has been potted, then replace the plant or plants in the greenhouse as near the glass as may be convenient. Three or four shoots will break forth near the top of the shoot. These must be allowed to grow the first summer without stopping, only when they have attained 2 inches or 3 inches in length place as many neat small sticks painted green as there are shoots at equal distances all round the plant. Then tie each shoot to its nearest stick, but be very careful in the drawing the shoots to the sticks or they will split off at the base just where they spring from the centre stem. If any of the shoots are stronger than the rest, let such be more bent down to check the strong growth; and, on the contrary, keep the weaker shoots more upright, which will give them more strength. The point to be aimed at is to have these shoots well balanced and of as equal strength as possible. They form the framework or main branches of the future plant.

The spring following, after repotting, these first shoots should be stopped, or, rather I should say, cut back to 3 inches in length from the main stem. They may be allowed to send out three shoots each, and to each of these a small stick should be placed, and the shoots tied to them so as to form a round head in the form indicated by the above woodcut. Replace the plant on the greenhouse-stage, and expose every part of the plant to an equal share of light. This is of great importance. If the cultivator has a span-roofed greenhouse that will be easily managed; but if the house is a lean-to, then he must turn his plant very frequently, or the shoots at the sides furthest from the light will be weak and drawn, and the consequence will be a one-sided plant. Attending to this point and keeping the plant properly attended to with water, air, &c., it will form a handsome fair-sized plant the second year. The following spring repeat the operation of repotting, stopping, and training; though if the plant is strong and healthy it may be allowed to flower moderately, and as the flowers are at the ends of the shoots they will be stopped naturally. Care must be taken that the shoots year by year are carefully thinned, so as to give air and space for the leaves to expand.

Watering.—Use soft water always. Rain water is the best. Give most water when the plant is growing freely—that is, during the spring and summer, through autumn and winter only give just sufficient to keep the plant from flagging. Keep a temperature up in winter of from 40° to 45°, and in spring it may be increased to from 50° to 55° in-doors.

SUMMER TREATMENT.

Young specimens should be removed out of the greenhouse in May, and put into a cold pit well glazed. Cover the bottom with dry coal ashes, and set the plants upon saucers turned upside down, or on bricks just so high as to allow head-room for the plants without touching the glass. Every fine day draw the lights clean off, and expose the plants to the full air. See that they have plenty of room. At least there should a foot space from plant to plant. Nothing injures specimens more than over-crowding even in the open air. In this pit they should remain all the summer, give them abundance of air every day and night too in warm weather. In heavy rains, if they are kept in a pit, they can be sheltered from excessive wet, and yet have air given them to keep them cool. During bright sunshine shade them with canvass or netting. When they have attained a sufficient size and strength then they may be set out in a sheltered place, but not near a wall, hedge, or tall trees. As soon as the nights begin to be cool, approaching frost, remove them into the greenhouse, first examining the pots, and if they are dirty let them be thoroughly scrubbed clean. Of course, during the entire season no weeds must be allowed to grow in the pots, nor yet any moss on the surface, and the plants will be benefited if the surface of the soil in the pots is frequently stirred, and even a little fresh compost added when the plants are housed for the winter.

WINTER MANAGEMENT.

This treatment may be described in a few words. Keep the air in the house sweet, and renew it by opening the lights every fine day. In damp foggy weather light the fires in the morning, and give air to dry the plants. Give but just water enough to wet the soil, and invariably supply that liquid in the morning. Allow no dead leaves or other decaying matter to remain in the houses. In frosty weather, of course, secure sufficient heat to keep it from the plants. By attending carefully to these directions, and destroying all insects that may attack the plants, an assiduous cultivator may grow a specimen equal to the engraving.

T. APPLEBY.

TRADE LISTS RECEIVED.

Descriptive Catalogue of Select Vegetable and Flower Seeds, by William Drummond & Sons, Stirling, N.B., and Dublin.—This is a very good and useful catalogue. Accompanying it are two small pamphlets—one containing "Directions for Sowing and Cultivating Vegetable Seeds," and the other "Directions for the Culture of Flower Seeds." Both of these are well written, contain good practical information, and will be found useful monitors to the uninitiated.

James Hunter & Co.'s Spring Catalogue and Price Current of Seeds, &c., Bristol, is an ordinary seed catalogue.

WORK FOR THE WEEK.

KITCHEN GARDEN.

In the open ground seeds of vegetables should be got in as expeditiously as possible. At the same time, should the weather continue wet, it will not do to trample the ground too much. In such a case, many crops may be sown in heat, to be transplanted at a more favourable opportunity. *Asparagus*, give plenty of air to these and all other crops in frames. *Cauliflowers*, plant out from the seed-pans all the young plants before [illegible] sowings. Dung and dig a piece of ground for planting out the plants from the pots in which they have been wintered, or from the frames, to be covered with hand-glasses, placing a strong plant in each angle; to be well soaked with water before they are turned out. *Cucumbers*, sow seed. *Carrots*, sow in frames, and thin those already up; also sow a crop in the open ground. *Dwarf Kidney Beans*, pot off all that are fit as soon as possible, and sow fresh crops. *Horseradish*, plant, if not done. *Lettuce*, sow a crop of Cos in frames, and in the open ground. *Potatoes*, plant on a warm border. *Sweet Basil*, sow in heat, as also Sweet Marjoram and Tomatoes, Sea-kale and Rhubarb, for next year's forcing to be planted on deeply-trenched and well-manured ground; a hillock of straw or light litter to be placed over the crowns to protect them from the vicissitudes of the weather.

FLOWER GARDEN.

Let all ornamental planting be finished betimes, and protect those planted in autumn from wind-waving. Pot Moss and Provence Roses and Persian Lilacs for future forcing; plunge them immediately, and mulch them over. See to the sowing of tender annuals in heat; and a few of the Californian and the hardier sorts of annuals may be sown in the borders. Ranunculuses to be planted as soon as the frost is out of the ground, and the surface in a fit state to rake; to be planted an inch and a half deep.

FRUIT GARDEN.

Prune Raspberries. Any Gooseberries and Currants not previously pruned should forthwith be attended to.

STOVE.

Any specimen plants in this house which require shifting should be attended to in the course of the month. Give Stephanotis floribunda, and Allamanda cathartica and A. grandiflora a brisk bottom heat. Pot Gloriosa superba, and begin to start some of the best of the Gloxinias, Gesneras, &c. Cut back some of the kinds after flowering to form bushy specimens, and to increase the stock by cuttings.

GREENHOUSE AND CONSERVATORY.

Persevere steadily in the directions as regards temperature, &c., laid down in previous calendars. A slight advance in heat may be made on bright days; but if cloudy skies intervene, revert immediately to decreased temperature and less humidity. The young plants of *Fuchsias* may now be shifted into large-sized pots. A general compost to grow them in is one part turfy loam, one part leaf mould, one part peat-earth. To this mixture it is requisite to add a small portion of sand, to be well mixed previous to using. The Camellias done flowering to be removed to a moist atmosphere, and a temperature ranging from 60° to 65°. Climbers to be pruned, cutting away weak and decayed wood, and shortening back shoots to provide bottom wood for the ensuing season. As the natives of various climates are kept together in a greenhouse, it is advisable that some arrangement should be as far as possible that the plants of warm climates may be accommodated with the warmest place, and that others of more temperate climes may be supplied with a free circulation of air.

FORCING-PIT.

Keep up the temperature to 65°, so as to be able to give air freely day and night in favourable weather. Fumigate to keep down green fly, and syringe lightly every afternoon between two and three o'clock.

PITS AND FRAMES.

It is now time to commence in earnest the propagation of all softwooded and free-growing plants for the adornment of the beds and borders in summer, and for that purpose a common dung-bed frame, having a slight bottom heat, will suffice. Fill up to within 1 foot of the glass, upon which place about 4 inches of dry sandy soil, in which the cuttings may be put directly you can procure a young growth for the purpose. Some prefer to put the cuttings in well-drained pots of sandy soil, and to plunge the pot to their rims in the dung, and others advise to strike Verbenas, Fuchsias, &c., in pans of wet sand, which is an excellent plan later in the season; but during the present dull season they would be liable to damp off. Alpine and other rare plants in pots to be looked over, removing all decayed matter, and stirring up the surface of the soil. Those which it may be desirable to propagate should be divided into pieces, repotted, and placed again in the frame. Sow seed of Salvia patens, as they make better flowering plants raised in this way than by cuttings. Commence for dressing Auriculas as early as convenient. Propagate *Dahlias* of which a good stock is required, by putting them in heat till they break, and then removing the young shoots, each of which to be potted in a small 60 or thumb-pot, and placed on a hotbed which has stood long enough for the moist heat to pass off, which would be fatal to the young plants. The frame to be kept as close as possible, and water to be given frequently; but a careful watch to be kept to prevent the access of hot steam. Sow Mignonette, Sweet Peas, Ten-week Stocks, &c., in a gentle bottom heat. Prepare soils by getting them into sheds to dry and sweeten for spring use. W. Keane.

DOINGS OF THE LAST WEEK.

This has chiefly been confined to works of routine. The frost that came again on Sunday has prevented us going on with Box-edging and gravelling, but furnished a good opportunity for turning over the ridges in the kitchen and flower gardens.

BOX-EDGING.

Many mistakes and extra labour are often incurred with Box-edging, by trusting entirely to the eye and the line for the level, and there is shaving off here, and adding there, and yet no certainty that all is right. The inclination of a long walk is also very deceiving. I have had people betting that they were sure that the walk fell from them to a certain point, whilst from that point to where they stood the ground actually rose 3 feet or 4 feet! In such cases, the walk will look best if at all straight, if the decline is regular so much in every 10 feet or 20 feet. The two sides on ground at all level, should also be level with each other. The first thing to do, therefore, is to secure the desired level on one side, by means of stakes put into the ground, and a stout line placed over them so as to secure a uniform sweep, which nothing tells better than a tight line and a gardener's eye. Place in similar stakes on the opposite side of the walk, and exactly on the same level, and then it is next to impossible to go wrong. Then the soil must be made up to that level, forking over the bottom and trampling it hard, adding the most of what is wanted at two or three times, and securing a width next the walk fully 3 inches or 4 inches beyond the line. When the soil is about the height of the line, beat it down firmly with a rammer, and make any inequalities all right with some fine soil on the surface, and beat firm with the back of the spade, and then cut out with the spade close to the line for the Box, which plant with the finest soil squeezed firmly against it. In winter a little sand should also be trickled along the line of the Box, which fills up all crevices, and if some is left on the Box it will help to protect it until the frosts are over. All the soil left after planting on the walk side should be cleared out after planting, and in winter and early spring especially some fine gravel should be placed against the Box to prevent the frost breaking the line. I know that Box is often planted with a tithe of the trouble mentioned above; but then there is the risk that the edging will sink in one place and be left standing high in others. As such jobs are rather permanent, it suits best to make the ground uniform in firmness, so that there shall be no sinking at all afterwards. If old Box is to be used, it ought to be earthed-up a twelvemonth beforehand, so that there may be plenty of roots near the top, as it is best to use rooted slips some 6 inches or so in length. The top of the Box should also be pruned level, so that when left an inch or so above the soil, it may all be level to the eye from end to end. In cold, stiff, clay soils, a little sand and fine leaf mould against the roots of the Box will benefit it much and give it a good start.

WALKS.

In new walks it is as well to do what draining is necessary as soon as the Box is fixed; and in gravelling, if at all rough, the dryness of the walk will much depend on the roughest gravel and stones being placed at the bottom. In such cases, walks will not only be generally dry, but even when on a slope they will be little liable to have the surface disturbed and run even by the heaviest rains.

Another thing to be guarded against is the rounding of walks too much. We should not like to have the centre higher than the outside—say for a six-feet walk 1½ inch, and for a twelve-feet walk from 2 inches to 3 inches. In a celebrated public garden, we noticed a walk once made by a great authority, which must have been some 12 inches or 15 inches higher in the middle than at the sides where it joined the lawn. We never stepped upon a more uncomfortable affair. We have heard of those not very bright, being initiated into knowing their left from their right leg, by one being bandaged with a hay-band and the other with a strawband, whilst the teacher put them through their facings by shouting out, "Hay leg, straw leg," and no one could walk on that wide walk without mentally saying to himself, "High leg, low leg, long leg, short leg." The more level walks are, the easier will they be to walk on.

One word more to amateurs. If the bottom of their walks, and also the rough stones at the bottom, are well covered with coal tar, or the gas lime from gas-houses, it will be long before worms, or even many weeds disturb them. Nothing takes more from the beauty of walks than worm-heaps, and whoever in a small place is near to a gas-house may, in the forming of their walks, pretty well set them at defiance.

ROUTINE.

Dried horse-droppings in a shed for Mushroom-beds. Earthed-up Potatoes in pots. Sowed some Celery and a few flower-seeds, being afraid to sow such things as Capsicums, Basil, and flower-seeds, as we know not yet where to put them when growing. In a month, by turning out many things into temporary beds there will be more room, and nothing is gained by early sowing unless things can be kept growing on. *Celery* is one of those plants that may be sown before Christmas and not bolt the sooner, if you can keep it without being checked; but if you sow in March and allow it to get checked, you may have all your crop bolted. It is the treatment, the kind growth, and not the mere time of sowing, that will secure good unbolted early Celery. The Incomparable, a dwarf white sort, but which is eatable for nearly the whole length, is very hardy, and may be grown thickly in beds, I begin to use in preference to every other sort, more especially as those who are judges begin to notice its fine qualities at table before they knew it was a particular variety. We have not had a single bad or run head of it this season. The earthing-up is almost a sinecure, as you may send plants to table 9 inches or 12 inches in length. When undressed they may be about 13 inches or 14 inches.

FRUIT GARDEN.

Much the same as last week; and have begun to put in a few cuttings of *Verbenas* that are at all scarce. My stores always stand in the cutting-pots all the winter. They will be set in a bed of leaves, with a fair heat and a frame over them, and some 15 inches or 18 inches from the glass, so as not to require much shading. The smallest bits are now used—two buds, or even one bud, with a good piece of the stalk, for the stalk between the joints will root fast enough. I was pretty well knocked in a heap by seeing at the first commencement as much thrown down as waste as some clever fellow would make a fortune of in the case of a new sort. After storing in little room all the winter there ought to be no waste now, and nobody but a particular friend should expect a handful of cuttings now, though there might have been truckloads in summer and autumn. If you ask me if this bed of leaves (tree), is the best thing and place for these cuttings, I say No. I would have preferred a propagating-house with bottom and top heat from hot water, and the ability to use the syringe in a bright day instead of shading. But we must make the most of what we have; and have tried to avoid one danger from the tree leaves—that of small slugs raked up with them, by turning and watering the surface with boiling water, a large water-pail to each light, then turning some quicklime among them, and then covering with dry coal ashes. These little matters often make all the difference between success and next-to-failure. We have some Ferns looking sickly from potting them in winter in cold instead of well-aired and heated soil. We have known fine collections of Melons sown in an afternoon, and not a seed left in the morning, from the pots not being protected from mice.—R. F.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Gardeners' Book-keeping (*W. W.*).—In Loudon's "Self-Instruction for Young Gardeners," published by Messrs. Longman, you will find the information you seek.

Iron Labels (*W. R.*).—We think any of the horticultural tool makers who advertise in our columns could supply you.

Flower-pots—Dividing Vinery (*Young Photo*).—A cast of pots is a trade term, and always consists of a certain number according to size. These casts generally sell for the same money down to 16's; above that you pay more. For instance, a cast of 60's, large or small, will give you sixty pots from 3½ inches to 4½ inches; a cast of 32's will be thirty-two pots of 6½ inches and so on; a cast of 12's will be twelve pots about 10½ inches; and these will be about half as much more as all the smaller sizes below them, and larger sizes will be two-and-a-half times as much—for instance, for four pots 15 inches each, you will pay about as much as for 150 60-sized pots. We do not consider the number of holes necessary; but if you like them best, the pottery in your neighbourhood would make them for you. You can easily enlarge the hole if not wide enough, by chipping the sides gently with a bar or hammer. A glass partition would be by far the best. There would be no necessity for raising the borders so high, unless you deemed it necessary. We have no objections to the plans of heating you propose; but as the flue is there we would first see what could be done with it before removing it. The back border might be separated from it by a few inches and made the same height. The division would give different temperatures, and the amount of air would do more. The top of the flue might also do for many purposes where extra heat was wanted. Why not, therefore, try what you could do with the flue, by sinking the bars 18 inches, putting in a block so as to narrow the neck of the flue, and place a damper to regulate the draught? We fear if thus you cannot make the flue suit your purpose, you will also have trouble with the stove.

Royal Botanic Society (*Subscriber*).—We do not know anything about the arrangements of the Royal Botanic Society. You had better write to the Secretary.

Wall-fruit Glass Structure (*Suburban*).—If you take any one of the opinions or practices referred to by you and carry it out, without mixing one with the other, you will not be far wrong, for after all the best is that which is carried out best. Your raising the wall would be well enough; but for ourselves we have no faith in the legality of moving anything that has been thoroughly fixed into a wall, or founded in the ground, without a written agreement with the landlord; but that is a lawyer's question, and tenants' rights and landlords' rights we do not pretend to understand. For moving afterwards the simplest plan to follow would be Sir Joseph Paxton's. The sashes might rest at top under the coping, or what would be better, a board from 1½ inch to 2 inches thick and 5 inches wide, might be fixed with stout nails under the coping, and if a bolt with your neighbour's permission went through the wall, and was screwed on the other side, with a piece of plate-iron a foot long, between the wall and the nut, the wall would be rendered all the more secure, and you could screw the tops of the sashes to it; that board, however, you would have to leave. The front you could raise to what height you liked and without posts, by fixing a sole plate to stout blocks on the surface, and these blocks might have posts driven in the ground in front of them to keep them steady, which posts might be left for the benefit of any one; but for these tenant matters the cheapest, and we think the best, would be a fixed roof, and just take things as they are. Fix the board under the plate as proposed, set in the ground firmly a line of posts in front, 4 inches square, and 3½ feet or 4 feet above the ground, and on that place a wall-plate, fasten rafters 3½ inches deep and 1½ inch wide, by the top to the eaves-board, and at the front to the wall-plate, placing them so as to receive glass 18 inches or 20 inches wide, by 12 inches deep. Leave a space all along the top for a foot ventilator, or have a ventilator the depth of two squares, hung on pivots between every alternate rafter, that is allowing one line of glass to go to the top, and the next line to be broken by a ventilator. Then for the front have a line of glass next the plate, 12 inches or 20 inches deep, the rest one-inch boards, screwed to posts, and one of them 12 inches wide hinged to open downwards. For moving, the glass might be fixed with screws, as described at page 352, Vol. XXV. For moving, however, sashes would be best, though more expensive at first.

Best Twelve Pansies (*Amateur, Blackpool*).—*Selfs.*—Maid of Bath (Hooper), white; Rev. H. Dombrain (Downie & Laird), dark; Yellow Model (Hooper), self, fine yellow; Mr. J. Graham (Crombie), fine purple. *Yellow Grounds.*—Francis Low (Downie & Laird), extra fine; Sir J. Cathcart (Turner), shy grower; General Young (Pollock); Mrs. Downie (Downie and Laird), deep gold. *White Grounds.*—Lady Lucy Dundas, extra fine; Mrs. Laird (Downie & Laird); Countess of Rosslyn (Laing), good; Seraph (Dickson & Co.), fine. Perhaps our "Florists' Flowers for the Many" will suit you. For five penny postage stamps you can have it free by post from our office.

Various (*Patna*).—Train the trees to wire an inch from the wall. China Asters will bloom late in pots, provided you sow the seeds about the beginning of June, and protect from rains and frosts in autumn. Nothing answers better for pot plants all the summer through when sown early. The cost of digging you will see stated in our last Number.

Grafting (*A. Q.*).—You can have free by post for five penny postage stamps "Fruit Gardening for the Many," if you send them to our office with your direction. There are full directions and woodcuts which will give you more information than we can find room for in this column.

Repairs of Gardener's House (*Live and Let Live*).—We can scarcely imagine a case in which the gardener living in a house on his employer's estate could be liable to repair that house. The usual terms of hiring a head gardener are, that his wages shall be so much money with a house to live in. The house is, therefore, a part of the wages; if there were no house more money would have to be paid to the gardener.

Young Wood of Peach Trees (*J. H.*).—Although not fully ripened, yet, we think, the wood sufficiently matured to be productive. We should prune them rather shorter than usual, and use protection from spring frosts and nights.

Planting a Garden Plan (*H. C.*).—We never undertake either to suggest alterations of ground plans, or to recommend the arrangement of colours, &c. All that we can do with credit to ourselves or satisfaction to others, is to point out what we consider errors in plans sent to us, on which are stated the plants proposed to be employed and their intended arrangement. We can criticise, but we cannot plan or plant unseen places.

Insect on Dead Fuchsia Roots (*An Amateur Gardener*).—We think the insect is some kind of Acarus, that lives on dead vegetable matter; but we cannot say what it is from your description. We answer then first, that such insects may do harm and can do no good to living plants; secondly, it is doubtful if Gishurst Compound will kill them underground, and if it did would be apt to render the soil unwholesome; thirdly, the Compound if weak will not injure plants above ground, but it must be very weak or it will do so, and we should never think of using it for seeds not above the surface; and fourthly, whether it would kill them or not, as it would do away with the sweetness and natural character of the soil, the best plan you can follow to secure freedom from all such insects, worms, &c., in your soil, is either to dry the soil over a furnace, and then expose it to air and moisture before using, or plunge the soil in boiling water, pour off when it begins to cool, and then dry and air the soil until it is neither wet nor dry before using. Fresh soil will often have such insects and worms unless so treated. It would be easy to half char, or soak as many turves as would pot many plants, and on such means we would have more faith than dosing with Gishurst Compound.

Growing Specimen Fuchsias (*J. L. S. M.*).—Use good turfy loam, with a little very rotten dung for Fuchsias, and they will be better of all sorts of manure watering if given clear and weak enough. One ounce of guano would do for three gallons of water, and two ounces of superphosphate the same. A peck of sheep-dung would make a thirty-six-gallon barrel rather strong, and so on of other manures. Judicious treatment is not to use it rank nor too strong, and to vary the kinds.

Orchids in a Greenhouse (*Orchidaceæ*).—Your attempt or trial to grow Orchids in your greenhouse will be successful, provided you set to work in the right way. You have obtained Cattleya Skinneri with only two stems. The skin, as you term it, that arises between the leaves is the remains of the spathe leaf that wrapped up the embryo leaves last season; care not for its turning brown, it should do so. You potted it in rough peat and charcoal, and have kept it damp, not wet. This treatment at this season of the year is wrong. It ought to have been kept dry for two or three months; the damp has caused the roots to turn mouldy. You have done right to keep the Dendrobium densiflorum quite dry; keep it so till the growing season (May) arrives. The Odontoglossum grande you may pot at once, and keep it dry also. It would have been better had you delayed purchasing these Orchids till spring, for most likely the nurseryman you had them from has grown them in an ordinary Orchid-house, and, in consequence, they will be rather tender to be placed at this time of the year in a greenhouse. As advised above you must keep them dry, and besides that place them in the warmest part of your greenhouse, sheltered from draughts of cold air. Should they even seem to shrivel up a little do not be alarmed; when warmer days come and they begin to grow they will soon get plump again. It will be advisable whilst they are in this state of rest to shade them from the bright sunshine with an old newspaper or thin tissue paper; keep a strict watch on them, and as soon as you observe the buds at the base of the pseudo-bulbs begin to grow, then give a little warm water to them out of a small spout. Let this first water be given round the pot-edge, just within the rim, never mind the centre being dry. In a fortnight after give a second watering in the same way, and when the surface becomes dry repeat the watering. As the young shoots advance, you will see young roots pushing out from its base. By that time the heat of the season will have increased so much that you may venture to water all over the compost, only take care not to wet the young rising shoots. Keep them in the greenhouse all the summer, and perhaps you may be able to perfect the first shoots; when that is achieved, then withhold watering entirely through the winter as before. As the plants are so small, we must advise you to be very patient and persevere in careful culture till the plants have made several successive yearly growths. This they must do before you can have flowers. Sphagnum is commonly called bog moss. It grows plentifully enough on wet, boggy moors. It is whitish-green when growing, and dries quite white; no other moss does so, therefore, you cannot mistake it. You might obtain the small quantity you will need for several years, from any London nurseryman that grows Orchids.

Jasminum nudiflorum and Aristolochia sipho (*Laura*).—Both these climbers, like all other hardy climbers for the walls of dwelling-houses, require the very best borders that can be made, and where Peach and Nectarine trees would flourish would be the sort for climbers. We wish that we could enlist the spirit of the age in gardening to a more thorough knowledge of the requirements of all manner of climbers. Many climbers, and more particularly climbing Roses, are liable to the attacks of insects, and insects prefer plants which are not in the best condition; and nothing can be more nasty about doors and windows than plants infested by insects. All good climbers in all good borders and aspects would amply pay for a weekly thorough watering, to reach at once the farthest-off fibres of the roots; and if anything good (manure) was at hand to add to the goodness of the water, so much the better. Under such conditions there is not a pin's difference to choose between Aristolochia sipho and Jasminum nudiflorum, only that the first is for the summer the second for winter. Sipho when done well has the most magnificent foliage of all hardy climbers, and it is for its leaves only that it is ever planted. In good, rich, holding soil it never takes the fly or any sort of insect, and never has a bad-looking leaf; but on poor hungry soil and in slovenly hands there is not a greater scarecrow in all the climbers. The Jasminum under good treatment is just as good in another way—in its graceful, free habit of growth, fine, deep green, bright foliage; and when it is over with the leaves in October, the whole plant comes into bloom as it did last October, and is now and will be for a long time as full as ever.

Cyclamens.—Mr. Beaton has received from Mr. Cole leaves of Cyclamen europæum; two kinds without flowers, and another kind the leaf and flower, but not named. He would suggest that the time of flowering should be named; also if the plant seeded without assistance—that is, without being dusted with its own pollen

ULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

ch 1st. Halifax. *Sec.*, Mr. J. W. Thompson, Southowram, near
alifax. Entries close February 20th.
14th and 15th. Taunton and Somerset. *Sec.*, Charles Ballance,
q., Taunton.
27th, 28th and 29th. Bath and West of England (City of Wells).
eward, S. Pitman, Esq., Manor House, Taunton. Entries close May 1.
4th and 5th. Beverley and East Riding. *Sec.*, Mr. Harry Adams.

CHRISTMAS POULTRY MARKET.

(*Continued from page* 384.)

'e may, perhaps, be excused a small digression while on the
ition of buyers, when we speak of a class not only met with
Christmas but at other times. We knew of a banker
eased only within the last few years), one of the most
ocratic of his class, and one of the most eminent; who,
ough he would in his private room in Lombard Street, or
Change, estimate his time by seconds, yet at a second-rate
in Leadenhall would spend a quarter of an hour over the
ay of a few shillings in purchasing of the most inferior
ity that which he could have ordered at a respectable shop,
have had of undeniable excellence for, perhaps, eighteen-
e more. With many people it is the work of a lifetime to
ince them they can only get money's worth for their money.
believe in their ability to get pictures, furniture, fish,
try, and so on, at less than its value. They buy nothing;
"pick up" everything. We believe it is seldom that the
l buyer is as good a judge of an article as the man of whom
buying it; and if he is, he gets only fair exchange.

e need hardly say after the description we have given, that
stmas is a time of very severe labour both to masters and
It is followed by a rest when the market has been a good
and all has been sold; but sometimes the supply has
ded the demand, and the consequence is a heavy stock,
hich there is no sale, except a forced one.

r a week after Christmas little lots of goods, generally the
expensive, are brought back by those whose anticipations
been too grand. Those who are not acquainted with these
s would hardly believe the adverse influence of a wet day.
le are wanderers on Christmas-eve. They have also rather
money to spend at that time; and the man who is a small
lose buyer for a coarse article at periods during the year,
not sacrifice his annual importance by going to a shop
his deviation will be known, and, perhaps, remarked
. He will go where he has never been before; will ask
rice of his treat as though he bought such constantly, and
oolly consult his wife or his friend whether they think the
e as good and as large as that he bought a day or two
e. This can only be done at a distance from home.

s not confined to eatables, the same man practises it in
He buys two half-dozens at Christmas. He walks in to
ll wine-merchant's some distance from home, asks how
es are, and when told there is a "nice thing at forty,"
alf a dozen as a sample.

hese same things are done in their own neighbourhood,
ather diminish than add to their importance. "Scroggins
ning out," says the butcher's boy going home with the
"Wish it may last," says the barman of the neighbour-
ine-vaults, as he delivers the "three of red and three of
" A wet evening compels all these people to buy at home
is, in their own neighbourhood, and as we have said,
re not then as good customers as they would have been
ere: hence after a wet day or two lots of expensive
y come back to market, and the row of enormous Turkeys
as admired at Leadenhall a week before, and formed the
and attraction of a shop for five or six days before
mas-day, are reconsigned to a salesman, like pointers in
ry, hunters in May, and traps and belongings, the pro-
of an officer ordered to join his regiment in India, "to be
r what they will fetch." The pleasures of hope and of
y may be well in poetry, but ask the owner of these poor
hat he thinks of them. When he bought them his mind
l him long before he got home the exact place where he
hang them. On his way home he asked himself if he had
ght them dear; when he unpacked them he decided that
not; and he called the attention of all his customers to
.

It was with him as it often is with many. His goods were more appreciated and admired by himself than by any one else. One said they were nasty, great, coarse birds; another preferred a delicate hen; and a third thought it wicked to give such a price for anything eatable. The buyer thought the first day they would make their money at any time; the second, he doubted whether they would pay much; the third, he tried to sell them at cost price; the fourth, he wished he had never seen them; the fifth, he wished somebody would steal them; and two days afterwards he took them back. Given in this case to find the pleasure of hope and memory. These are not the only goods in the market; but they are all of the same date. Many small packages that arrive during the busy week are unnoticed; others fall down between or behind the large hampers; some few are lost altogether. But for these waifs and strays there would be nothing for sale for some days. Country people, like Londoners, are keeping Christmas. Little by little these remnants find buyers. It is Hobson's choice with those who want. They are the last signs of Christmas; the excitement is past, and things subside into their accustomed track.

THE CHINCHILLA OR SILVER GREY RABBIT.

This has for some years past taken a place amongst the fancy Rabbits of this country, to which it is well entitled from the great beauty of its colour. It derives the term Chinchilla from its similarity in colour to the animal of that name, which is so famous for its rare and valuable fur. The Chinchilla Rabbit was imported into this country about seven or eight years ago from Belgium, into which country it had been introduced from France. Those in the Zoological Gardens, Regent's Park, were brought there from the Zoological Gardens at Antwerp, and afterwards crossed with some bred from the wild Silver Grey by the writer of this paper. The dark wild Silver Grey Rabbits for centuries have been bred in warrens in Lincolnshire for the sake of their skins, which are exported in large quantities to Russia and China, where they are made up into dresses in imitation of the silver grey fox, and also the sea otter, the skins of which vary in price from £20 to £50 each, according to their quality. It is not known when the wild Silver Grey was first brought into England. Within the last twenty years some have been brought from the Lincolnshire warrens and introduced into warrens in Norfolk, Suffolk, and Wales, and there is also a small warren of them in Sussex. One warren in Suffolk, between Brandon and Thetford, comprises 3500 acres of barren land, from which 35,000 Rabbits are annually killed. They are not so hardy as the common Grey wild Rabbit, and require feeding through the winter. The value of their skins is from £1 to £1 4*s.* per dozen.—Hunts.

A Rare Occurrence.—Mr. Robson, gamekeeper to Colonel Leslie, Tetternear House, had a Silver-spangled Hamburgh hen built a nest in a tree. His poultry were in the habit of roosting in some spruces close to his house. The usual process was gone through, first of carrying sticks, then straw; but when about finished it was by accident destroyed.

THE CANARY AND THE BRITISH FINCHES.

(*Continued from page* 366.)

PAIRING AND BREEDING.

It is generally recommended in pairing Canaries for breeding purposes to match a Jonque or Yellow cock with a Mealy or Buff hen, and *vice versa;* it being thought that if two Jonque birds are paired together, that the young ones produced from such coupling are more delicate and rotten-feathered—that is, the plumage lies rough and disordered, or the feathers are apt to fall out, so that the bird has a ragged and untidy appearance.

There may be some truth in this theory when the birds which are paired together are nearly related or already of a degenerate and weakly stock, but it is not borne out by my experience where the birds are hearty and not too closely allied. I consider the coupling of a Jonque cock with a Jonque hen (I am speaking of clear or whole-coloured birds) produces the highest-coloured young; but I should not think of pairing birds more nearly related than cousins if I could avoid it.

In breeding Pieds, for accuracy of marking it is advisable to have the parents as nearly correct in their division of colour as possible; and if one is rather deficient in one mark the other should have it in greater proportion, in order that the property may be more evenly balanced in the progeny. Undoubtedly there is much truth in the saying that "like produces like," and, therefore, it is advisible to have the parents as correct as can be obtained; and the greater number of generations back that their parents have been bred to that particular variety, in the same ratio may the young be expected to come true.

It must, however, be remembered that the original colour of the Canary is a dark greenish-grey, and that consequently there is always a tendency among strong, hearty birds to return to that colour: therefore, in breeding accurate Pieds, it would not be better to match two birds together for breeding which were already too dark, as the young would, in all probability, be darker still.

The same remark holds good of breeding the London Fancy Canaries. If two dark or strong-coloured birds are coupled the young would be still deeper in colour, and in a few generations would return almost to the Lizard variety.

It is on this account that the breeders of London Fancy birds recommend that if one is too strong in colour it should be mated to a soft or pale-coloured bird, in order to counteract the natural tendency. It may not be out of place to remind the amateur that in-and-in breeding—that is, the pairing of near relations together, not only makes the offspring more delicate, and, consequently, less able to withstand an attack of disease, but also softens or lightens the colour, and it is not improbable that many of the light-coloured varieties of Canaries may have sprung from this cause or albinism.

In selecting birds to breed from I should prefer a two-year-old cock, and both should be lively and well. March is a good month to pair them; but if you have convenience to keep them from severe cold they may often be paired earlier with success.

It is best to put the cock in the breeding cage first, and let him get acquainted with his new abode, so that he may be master of his future house. He may receive a small quantity of hemp-seed to excite him, and when the hen is turned in, commence at once to feed with bread, egg, and mawseed in the side-pan, or some such nutritious food as you desire them to rear their young on. When two hens are to be put in one cage, to one cock, it is better that they should have been previously acquainted by having been kept in the same cage; this may prevent after-quarrels.

In a room or aviary one cock is sufficient for four hens; and it is better not to have two cocks unless it is large.

When the hen is about to lay, which may be judged by her appearance and the advanced state of her nest, it is well to mix a little moist sugar in their soft food, which, acting as a gentle purgative, may assist the hen in laying and prevent her being egg-bound—a complaint that kills many young hens in cold weather. A piece of cuttlefish bone, or mortar with a little salt in it, is also useful at this time for the birds to peck; and I chop up the shell along with the hard-boiled egg.

Plenty of green food, as chickweed and groundsel, are much relished by the birds, and they feed their young largely on it; but it should be fresh, as stale green meat is thought to be injurious.

The hen Canary usually lays from four to seven eggs on as many successive days, and incubates thirteen or fourteen days. Some fanciers remove the eggs as laid, substituting a bone or ivory egg till all are laid, keeping the eggs in a cool and safe place, and returning them when the hen ceases to lay. This is very necessary if the cock is inclined to be mischievous, in which case he should be removed, or placed in the compartment of the cage when the eggs are put into the nest. It has also the advantage of hatching all the young at one time, so that they obtain an equal share of food, for it must be remembered that the birds are in an artificial state; and though it is always best to leave them to their own instincts as much as possible, yet their being confined so close to their nest, they visit it oftener than they would do if flying at liberty and having to search for their food. Thus it is that the cock will sometimes be too officious and meddling, and his fondness for eggs may take an unnatural turn, or the hen may be induced to sit before she has finished laying—irregularities that would not be likely to occur in a state of nature. The advisability of careful watchfulness is therefore apparent, and the fancier must use his own judgment in each case, remembering that if all goes on properly the less he interrupts them the greater will be the chance of his success.

When the young are expected, let the old birds have a plentiful supply of soft food and green meat once, at least, or better, twice a-day. If given overnight they can get it early in the morning. There is rarely much trouble about the hen feeding her young ones; but I have had cases in which the hens have sat close on the young and starved them to death, never pretending to feed them, and I am unable to offer any advice when the natural instinct fails; but I consider it of rare occurrence, and only happens to such birds as have, perhaps, sat on unproductive eggs a season or two, and never had any young ones to feed. These birds are often excellent incubators. I do not call to mind that I ever had a young hen refuse to feed her nestlings; all I can advise if the hen does not feed the young, which may be seen by examining their throats if they contain any food or not, is to drive her off the nest two or three times a-day, or oftener, that she may feast on the good things provided, and when she returns be tempted to feed by seeing the little gaping mouths in her nest and hearing their faint cries. If once she begins to feed she will generally continue.

A young cock may sometimes be too affectionate, and even eat the beak which he ought to fill; but a cock that has once reared young ones, will frequently feed all those that cry to him, though there is much difference in the dispositions of different birds.

When the young leave the nest, and the hen commences building again, she should be watched, if in a cage, that she does not pick them to line her new nest; for as she has no reason to understand that it hurts them, her instinct only prompting her to carry any soft substance to her nest, consequently, if they are not placed in the compartment so that they can be fed through the wires, they may be much disfigured. Where they have plenty of room but little danger exists.—B. P. Brent.

CHEAP SUGAR FOR FEEDING BEES.

Feeding bees last summer I sent for some crushed white lump sugar, but found my grocer had sent me some of the enclosed at 5*d.* per lb. As I live some miles from the town I was obliged to use it, and find it a very pure sugar—if anything, purer than loaf sugar. I fed my bees last winter entirely on it, and find it makes a very fine and clear syrup.—A. W.

[The sugar which accompanied this letter is a very good sample of what is known in the trade as "crushed lump." Although it differs in appearance from pounded lump sugar, it is in other respects identical with it, and is, therefore, equally well adapted for bee-food.]

EARLY POLLEN GATHERING.

Thursday, the 30th of January, was with us one of those beautiful mild "pet days," with the thermometer about 50°, which sometimes appear like "a green oăsis in the desert" of winter, agreeable to all as the harbinger of spring, and peculiarly so to the bee-keeper to visit his apiary resounding with sweet melody, and note from hive to hive with satisfaction the gambols of his favourites, and their busy stir removing the dead and débris, speaking emphatically of live queens and prospective success.

Taken rather by surprise to notice within a few minutes to five that afternoon brisk arrivals and departures from the frame-hive, to which I made the ineffectual attempt of introducing the Devon hybrid queen, first suspected pilfering; but there was a something in the whir of the arrivals that sounded somewhat of summer ladings, and prompted a minute scrutiny, when, lo! their baskets sparingly loaded with dark-coloured pollen. My next surmise, Could the Devon monarch have after all supplanted her native rival, and was thus impelling her Scotch subjects in forgetfulness of their "canniness" to issue forth in bleak January to cater for her young fry? This supposition was strengthened by observing a perfect stillness in the hive on either side, subsequently weakened by witnessing a like proceeding going on in a different part of the apiary the same afternoon in one of the hives of my poor "beat-outs."

By being in a position to report pollen-gathering last spring, on the 3rd of February, I quite astonished "A North Staffordshire Bee-keeper," as well as Colonel Newman, who learned with surprise that we northeners had nearly a fortnight's start of his salubrious Cheltenham. At the same time I expressed the opinion that "one hive suspected being so employed for eight or ten days previously, from the business-like air with which they set out late in the afternoon," which this season's procedure has confirmed. From the dark-coloured substance not being so easily detected, the late labour affords the best cue to its discovery. The term pollen to be here received not in its horticultural but apicultural sense, as on the 30th ult. we had only a few aconites in bloom unheeded; our bees in this neighbourhood being in my opinion indebted for their earliest supply to the exudations from the swelling buds of the plane tree.—A RENFREWSHIRE BEE-KEEPER.

THE CROSS BETWEEN ENGLISH AND LIGURIAN BEES.

Do the half-bred bees resemble most in their habits, in colour, and in general appearance, their English or their foreign parents?

Do they always present a perceptible combination of the two tribes, or are the peculiar characteristics of their ancestors on one side ever cancelled or made to lie in abeyance?

Have they been bred both from Ligurian queens crossed with English drones, and from English mothers and Ligurian fathers? and if so, do the half-bred bees, the produce of female Ligurians, differ from the bees whose sires were of that kind, and whose progenitors on the female side were of our English black breed?—W. H.

[We have not had sufficient experience with these hybrids to reply fully and dogmatically to the various inquiries of our correspondent. We believe that the worker offspring of a hybridised queen bee will generally be found to vary very considerably in appearance. Some do not differ perceptibly from pure Ligurians, whilst others are not to be distinguished from the common species, and in the remainder are frequently to be found every intermediate shade between the two. Mr. Fox, and "A NORTH LANCASHIRE BEE-KEEPER" (possibly also "A RENFREWSHIRE BEE-KEEPER" may be added to the list, since we believe it is not quite certain that his Devonshire hybridised queen fell a victim to the fury of the native Scotch bees) possess black queens which have been fecundated by Ligurian drones. Probably one of them may be kind enough to reply more fully to the above queries.]

APIARIAN NOTES.—No. XV.

MY APIARY IN 1861 (*continued*).

No. 10.—As previously mentioned, this straw hive, kept through the winter and miserably weak in spring, was destroyed. Four of the largest combs were at first fixed in Langstroth-frames; subsequently, with a fine queen and a very small number of bees, were added to the combs of the driven hive No. 6, under which name it is now known.

Of No. 6 I need only say, that when this was accomplished the bees were far from being capable of covering the whole of the very large quantity of brood, a considerable proportion of which must have been sacrificed if more nurses and heat-sustainers could not be obtained. This desideratum was attained by transposing this hive with No. 11, a newly-stocked Langstroth-box, by which more than two-thirds of the population of No. 11 was obtained. This evil was rectified, and the proper balance of numbers given, by reshifting the two hives and returning them to their original positions a few days afterwards, the young bees fast hatching from the cells helping to sustain a fair equilibrium. From this hive, which I did not allow to throw off a natural swarm, I occasionally removed full frames of brood and honeycomb, and on one occasion deprived it of nearly all its inhabitants for the purpose of strengthening other artificial stocks; nevertheless, in the autumn it was exceedingly strong in bees, and almost entirely filled with sealed honey, besides affording me a small quantity for the table.

No. 10 having ceased to exist, its place and number in my apiary was soon awarded to a successor; the history of which must now be told. Its first appearance on any stage was a very insignificant one. On May, the 18th, the day following the transference of the combs of No. 6 into the Langstroth frame-hive, I chose from it one of the most favourable-looking brood-combs, and, after brushing off all the bees, placed it in a small four-frame box, styled by Langstroth a "nucleus." Adding three frames containing a little empty comb, I removed from its stand to another part of the garden a straw hive (No. 12), when a good many bees were out, setting the nucleus (No. 10) in its place. Though at first very excited and uneasy, the bewildered bees at length began to cluster about the brood-comb, and on the 21st, three days afterwards, I had the satisfaction of finding a royal cell in a state of considerable progress. I may here mention that it is not considered good practice to brush off the bees which are attached to the comb; but, having ascertained that the queen is not among them, to transfer them, as little disturbed as possible, into the queen-raising nucleus. But in the present instance the plan adopted succeeded well. On the 22nd I received a present from Mr. Woodbury of an unimpregnated Ligurian queen, one which hardly reached his standard as to appearance, and which also exhibited some little sign of a defect in its wings. She was confined in a small, perforated zinc, queen-box, which was fixed among the combs, and was liberated the following day. On inspection a few days after I found several additional royal cells in various stages of progress. At first I imagined the queen must have been destroyed, but soon discovered her racing over the combs, the bees paying her little or no attention. The deformity in her wings was now much more discernible, and considering that she could never become impregnated owing to her inability to fly, I judged it best to destroy her.

A fine young queen emerged from her cell on June 3rd, and quickly destroyed the inmates of the remaining royal cells.

On June 19th, having laid a considerable number of eggs, she was removed from No. 10 to be placed at the head of a stock, No. 13, from which all the bees had been driven to form an artificial swarm. The indefatigable bees of No. 10 on discovering their loss immediately took steps to repair it, and from the eggs laid by the queen, whose reign over them had been so limited, they selected two, which were duly provided with the necessary food and apartments. But these were not destined to arrive at maturity; for my friend, Mr. Woodbury, presented me with two Ligurian royal cells—supernumeraries from one of his queen-raising hives. I, therefore, cut out the two from No. 10, and substituted those of Ligurian origin; believing that, notwithstanding the absence of Ligurian drones in my apiary, I should thereby improve my stock.

On July 5th a fine Ligurian queen being at liberty, the frames were transferred into a full-sized Langstroth-box, and other frames with combs were added. The offspring of this queen are to all appearance perfect Ligurians, and the hive promised to become a first-rate stock; but late in the autumn, it is much to be feared, that during some manipulations, more from motives of curiosity than necessity, the Ligurian mother's life was sacrificed, as I have been unable to discover her on several inspections. The bees are still numerous, and in themselves do not exhibit any sign of being queenless. On some fine warm day I hope to have another careful search, and if she is not to be found some steps must be taken to prevent the sacrifice of this excellent stock.

No. 11.—At the time of the April inspection previously mentioned, this was a strong stock in a common straw hive located in my town garden. Having, through the kindness of Mr. Woodbury, been favoured with the perusal of Langstroth's admirable work, I resolved, after well considering the subject, to adopt his principles, both as to hives and general management. I was also anxious to possess so valuable a work, and was fortunate in obtaining a copy through Mr. A. Neighbour. I hear the book is at present out of print, which it is to be hoped will not be the case very long, as it is a first-rate production of a first-rate bee-master.

Some modifications as to dimensions and other minor particulars better calculated to suit our climate and honey capabilities, were deemed necessary; and when, after due consideration decided on, have been adopted without any material alteration in all the boxes I have had made. The chief ruling principle in the system is that of bar-hives generally—viz., that every frame shall fit equally well any situation in any hive. The internal capacity and form of the boxes may vary as suits the fancy or district of each proprietor. I have nine of these hives at this time, all stocked by artificial swarms, or by transference of combs and bees from straw hives, during last summer and autumn.

No. 11 was the first experimented with. On May 4th I drove out all the inmates of the straw skep, allowing them to remain in the empty hive on their proper stand while the combs were carefully cut out, fitted to the frames, and kept temporarily in place with small strips of wood and lead wire. When the combs were bent, they were straightened by holding near the fire for a short time, and placing between two boards with a small weight on top until sufficiently cool. Where too thick to allow the frames to approximate close enough, the surfaces were pared with a sharp knife. Only six or seven frames could be furnished with the combs cut out from No. 11; but small pieces of empty comb were attached to the remainder, making ten in all. When arranged to my satisfaction, or as well as the inequalities of the combs would allow, the box was placed on the usual stand; by a smart rap or two the bees were dislodged from their temporary position in the straw hive, and falling on the tops of the frames quickly found their way down among the combs, delighted to return to their old but somewhat dilapidated quarters. The cover was put on, and they were left to their own devices. The next day the combs were found to be firmly attached to the frames, the wires and other extraneous supports were removed, and a little more paring was necessary where the surfaces were united to each other. For several days subsequently a little attention was requisite before the combs, which had been very thick at the edges, and rather irregular in their old hive, could be reduced, so as to be sufficiently straight in the frames, and of manageable thickness.

From this stock several frames full of brood, as well as many adult bees, were removed for the purpose of making and strengthening artificial swarms. Two supers of the primest honeycomb, weighing 24 lbs. nett, also fell to my share.—S. Bevan Fox, *Exeter*.

(*To be continued.*)

THE CHEMISTRY OF HONEY.

"Honey is formed or naturally deposited in the nectaries of flowers and is extracted from them by the working bees; they deposit it in their crop or honey-bag, which is an expansion of the œsophagus, and from this receptacle they disgorge it again when they return to the hive. In the interval it is probably somewhat altered by admixture with the liquids which are secreted in the mouth and crop of the insect, so that the honey we extract from the hive may not be exactly the same chemical condition as when it was sucked up from the flowers by the laborious bee."—*Johnston's Chemistry of Common Life.*

I regret that the Editors of The Journal of Horticulture should have declined being umpires in the matter of the unmistakeable change which takes place in simple syrup during its sojourn in the stomach of the bee. My experiment would certainly have been one from which the possibility of error would have been excluded; and I now give the particulars of it in the hope that the Editors will either reconsider their decision, or name some other tribunal to which the question may be referred.

I have an artificial swarm made so late as the 9th of last August, after the honey-harvest here was entirely over, and supplied with a large quantity of simple syrup, by the aid of which they fabricated such combs as they possess. It is one of these new combs, which being themselves made from lump sugar alone, and, never having had any stored in them, must necessarily be perfectly free from the "reek" of this latter substance, that I again offer to submit to Mr. Taylor and the Editors of the Journal of Horticulture, or such other competent tribunal as they may point out.

Having, therefore, offered most conclusively to prove my own case, I now challenge any bee-keeper to prove the converse of my proposition by producing a piece of comb in which simple syrup —*i.e.*, lump sugar and water only, has been stored and sealed by bees, and in which the syrup remains in every respect unaltered. To any one who can do this I will at once present a good stock of Ligurian bees.

That I have not pronounced an opinion on this point without sufficient warrant, will, I think, be evident when I state that during the last two years I have administered to my bees about half a ton of simple syrup which I have been in the constant habit of tasting both before and after it was deposited in the combs, and have invariably found that it underwent a very marked change in the stomach of the bee. In fact, whether placed in old combs or in new ones, it never failed to manifest the peculiar characteristics of true honey.

The mistaken ideas on this point which have been promul- [illegible] high practical authorities [illegible] Taylor, were probably owing to their feeding bees with strongly-flavoured compounds, in which the delicate change effected by the secretions of their little labourers would, of course, be entirely imperceptible. It has long been held altogether impossible to "make a silk purse out of a sow's ear," and we need not, therefore, be surprised if bees have failed in making honey either from sugared ale or from sweetwort.—A Devonshire Bee-keeper.

[Such a demonstration would be quite conclusive. If an artificial swarm be formed and be confined in a room having access to nothing but simple syrup formed of lump sugar and water, and out of this the bees form their combs and fill them with honey, then we shall consider their power to form honey from sugar clearly proved, and shall be thoroughly pleased to have elicited the truth on this disputed point. The quotation from Professor Johnston's "Chemistry of Common Life," does not prove the fact, he merely says that it may be so.—Eds.]

BEES IN THE EAST INDIES.

How does it happen that wax in our hives melts at a temperature just above 100°, whereas in the centre of Hindostan, where the temperature of the air often is higher, the combs of wild bees remain unsoftened?—Sahib.

[There is no doubt that the melting-point of the wax prepared by the wild bees of Hindostan is somewhat higher than that of the wax prepared by European bees. This is only one among a thousand instances of animals adapting their surroundings to circumstances, and is one of those instances in which their proceedings approximate to the proceedings of man to secure a similar object; for more shellac is put into sealing-wax for East Indian correspondence to render it harder—that is, to render it less liable to melt.

The bees of Hindostan, moreover, adopt other modes of keeping their combs from melting. They never construct them in a hollow tree, or in a cavity of a rock, but on the shady side of a rock, and under a projection of it that increases the shade and shelters the comb from rains, so that it is fully exposed to the air, and thus is kept as cool as the climate will permit.

The bees of Hindostan are far more vindictive and fierce than their European relations, and charge without the slightest provocation given them, in hosts upon any one who approaches their place of suspension. The native boatmen, naked as they are, are marvellously on the alert to save themselves from such attacks. Their bugerows and other river craft go most tediously slow, so the boatmen always have thick woollen clothes at hand, with which they closely envelope themselves whenever assailed by these direful insects.

"Direful" is not too strong a term, for we know of more than one death being occasioned by their stings, not only to animals but to men. One such death occurred near Jubbulpore to one of the civil engineers of the Great Indian Peninsular Railway. Two of them, named Armstrong and Bonnington, were surveying, and in their progress came near to a bee colony on the Marble Rocks. The charge of the bees was instantaneous, and the engineers fled for shelter to the Nerbuddah River which was at hand; Armstrong, by swimming and diving, escaped with little injury, but Bonnington, who could not swim, was so severely stung about the head as to die in consequence.]

EFFECTS OF INTERBREEDING.

Will "B. & W." kindly state if the "increased activity" of which he speaks in page 368 does not take place almost immediately upon removing bees to or from a distance, and long before the issue of a swarm warrants the apiarian in believing that any infusion of "new blood" has actually been effected? Also why he does "not think that a mere removal from one locality to another can entirely, or even chiefly, account for this increased activity," when all the evil effects of the only undoubted case of interbreeding with which we are acquainted, have, according to his own showing, been completely and entirely averted merely by swarms roving to and from distant localities? —A Devonshire Bee-keeper.

[In reply to the above queries, I am quite ready to admit that increased activity apparently takes place "immediately upon removing bees from a distance," which I attribute to change of climate or pasturage, or both. Moreover, I cannot speak with certainty as to the effects of cross-breeding from any facts which have come within reach of my own experience. As I stated at page 368, "this, I fear, must remain open to speculation only," at least till we have some data on which to found a "belief;" and yet I think I remember to have seen it stated in print, that hybridised Anglo-Italian bees have proved themselves in every respect superior to the pure varieties from which they sprung.* I venture no more, however, than to claim it as an open question. If I incline to the belief I have stated, it is partly because I see no reason why bees should be an exception to the rule which seems to prevail throughout the animal and vegetable world; and partly because we know that bees do migrate more or less every year to and from more or less distant localities, and do cross blood with their neighbours. In the case of the bees of Tasmania, where thousands of swarms have annually for forty years at least shifted their quarters from the plains to the mountains, changing both climate and pasturage, I am disposed to think the effects of their interbreeding as descendants of one family, almost tantamount to the cross-breeding of other animals which have descended at a more remote period equally from "one blood."—B. & W.]

SUPER-POSING.

I WROTE you last autumn about joining my Ligurians with a hive of common bees, and not receiving a very favourable reply as to the result to be obtained, I did not like risking my Ligurians; but having two old common hives of bees, I thought I would try them, as the straw of both is nearly rotten. So, putting an adapter-board on to the one full of honeycomb and bees, I set the other one full of comb and bees, but very little honey, on the top; then gave them a few puffs of fungus smoke; left them for the night, but found the next morning a good deal of fighting had taken place. Then came off a few cold days, when the bees never showed themselves; but when a few warm days came, they commenced fighting again, and a good many dead bees were thrown out; but I could not find a queen among them, and I occasionally took the top hive off to see if all had joined, when I found bees in both hives; and during last month I looked again, and still found they had not joined, and on Tuesday, the 4th inst., being a very fine day here (South Durham), most of my bees were out, and on Wednesday, the 5th, I found the dead queen on the alighting-board. Since then we have had it too cold to look into them to see if they have now joined, but intend doing so the first mild day.

Now, as to super-posing. If any (many) of your correspondents are right and many wrong, as I fancy, had I have made the opening between the two hives larger, and joined them sooner during warm weather, and the top hive having a good supply of honey and comb as the cold weather came on, they would have gone up. But if both hives be left till summer they will, I think, make the bottom hive their breeding-place, and store in the top; but as soon as the weather is a little warmer I will look at them, and let you know the result. But I am told by a very old bee-keeper that had I put the two hives together—that is, the two bottoms, leaving a place between to go in and out, giving a few puffs, and letting the hive I wanted them to go into be at top, that they would have soon have done so without fighting; and I am inclined to try this plan another time.—A. W.

[Our correspondent's story brings forcibly to our recollection our own tragical experience in super-posing, which has caused this operation to become obsolete in our apiary. We shall be very curious as to the results of the experiment—whether one queen still survives; and if so, in what hive she has fixed her abode. However this may turn out, we feel bound to admit that our northern friends have placed the question in a new light, and have adduced facts which had they before come under our notice would certainly have made us hesitate before expressing so decided an opinion. There is no doubt that if left united during the next summer the lower will become the stock-hive, as stated by "A. W.;" but this is not exactly the point in debate. We have always placed the inferior hive on the top, with communication through a two or three-inch central aperture, relying that the bees would in this way be compelled to unite in the lower one, and in this expectation we have never been disappointed. We are now told by our northern correspondents that with unrestricted communication (forming, in point of fact, but one hive, and aided, possibly, by the inferior one being at the bottom) the lower hive may at some time during the winter be found deserted by its occupants, and removed without difficulty. We can readily imagine that under these altered circumstances the result would be as they state, owing to the instinct which impels bees to congregate during winter immediately below, and in close contact with, the lower edge of that part of their combs which contains sealed honey, contracting their cluster and gradually getting nearer the top of the hive as their store diminishes during cold weather, but immediately extending themselves downwards towards the entrance when encouraged to do so by a few hours' milder temperature.

Having thus summed up the conclusions, which we think are to be arrived at as the result of this protracted controversy, we may be permitted to hope that all hasty expressions which have transpired may be considered regretted and withdrawn. In apiarian science we may be well assured that all have something to learn, and however we may differ in opinion, we should never lose sight of this fact, that in these little discussions it is far nobler to endeavour to ascertain and establish the truth than to contend for victory.]

THE COMMON BEE AND NATIVE BEE AT MELBOURNE, IN AUSTRALIA.

IT has always been a matter of surprise to me that so little attention has been paid to this really useful little creature. It is the exception to find them located either with the farmer or market-gardener, instead of which there ought scarcely to be a garden without them. Both the farmer and market-gardener appear to think the little creatures beneath their notice, or that they are more trouble than they are worth; but I think I can prove that if properly attended to they are highly remunerative. At the commencement of last season I had five hives; but, from some cause or another, one of them did not swarm, so the increase was from four only, and from these and the swarms that swarmed again were thrown off the large number of twenty-three swarms. Of these, three got away and one stock died, so that at the present time the stock consists of twenty-four hives (not all in my possession, for eight were given away, which increased to ten). The weight of honey, taken in glasses and boxes from the tops of the hives, was between 140 lbs. and 150 lbs., which, from its purity, is worth double the price of that taken from the hive itself, and which can be removed without disturbing the hive at all.

As a proof of what each will do, I may mention that, from the hive which did not swarm, I took from the top 40 lbs. of honey, and I suppose the hive itself weighs 40 lbs. at the present time. They commenced to swarm in October. On the 4th of that month three swarms came off, but two of them alighting on the same bough, joined together and made one. These were put in a hive, and in rather less than six weeks had swarmed again, and I took off a glass containing 13 lbs. of honey. The profit on them I calculate thus:—

10 swarms at 30*s*.	£15	0	0
5 do. at 20*s*.	5	0	0
4 do., at 15*s*.	3	0	0
3 got away			
1 died			
—			
23			
140 lbs of honey, at 1*s*. 6*d*.	10	10	0
	£33	10	0

This, of course, is supposing the swarms were sold at the latter end of the summer; but if they were sold earlier, there would not be so much honey—say by one-half. Possibly through the winter two or three hives might die; then, too, as bees increased, both swarms and honey would fall in value; but even supposing they did to half what I have reckoned them at, there is still left a very good inducement for their cultivation. I am quite certain that if they were properly attended to there might be tons of honey exported every year. It is a mistaken notion that bees require no attention; although it is not much, they do require some, and they will not thrive unless that attention is paid them

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* The production of hybrids between two different species or varieties of bees is, of course, a very different affair. I have, indeed, reason to believe that these hybrids are decidedly superior to the common species. Whether they are an improvement on the Ligurians is very doubtful, and, like the "effects of interbreeding" may well be deemed "an open question."—A DEVONSHIRE BEE-KEEPER.

They should be put in good hives, and placed in a suitable situation. Till lately, and even now it is thought by some that anything is good enough to put them in, and ten to one if you see them in the country you will find them in an empty gin case. Some time ago I was at a place where bees were kept, but a complaint was made that they did no good. I asked to see them, and there was the gin case, with the bees going in and out, but very sluggishly; and well they might appear so, for on turning it up I found it to be in a very dirty condition—one was occupied by the bees, while a very fine spider had domesticated itself in the other. I cut the box in two, cleaned the bottom-board, and placed it on the stand again. They are more easily managed at swarming time than is generally imagined. Being engaged during the day in Melbourne, I could not attend to them myself, and so left them very much to the care of the servant. They can be removed from one place to another with the greatest ease. When the John Williams was last here, I gave Mr. Buzacot a hive, which he took on to Sydney, with the view of getting them on to the South Sea Islands. He wrote to say they got to Sydney all right. It is his intention next year, when the vessel visits that port, to send some on to the islands, and I have every confidence that the experiment will be successful. I have heard it said that bees do not thrive on the sea coast, but the above results having been experienced in Brighton fully disproves such an idea. In conclusion, I would take this opportunity of drawing the attention of the Acclimatisation Society to the native bee—a small insect, I understand, about the size of the common gnat, stingless, and collects a good quantity of honey. I am not aware that any attempt has been made to domesticate them. During the coming summer I intend, if possible, to procure some, and I should like to hear of others making the attempt. The natives can easily track them, and for a consideration would, no doubt, be very glad to supply them.—E. Baines.—(*Melbourne Argus.*)

[We shall be obliged by any of our readers furnishing us with more information concerning these Australian stingless bees, which we also wish merchants trading thither would take steps for importing into this country.—Eds. J. of H.]

Cod Liver Oil for Dogs.—Possibly some of your readers may not be aware of the efficacy of cod liver oil as an alterative and strengthening medicine for dogs, given once or twice a-day, in doses from one table-spoonful, according to size and age; it works wonders in weakly puppies, wasting of flesh, and indeed in debility of any nature. Give the oil either mixed with milk or broth or after feeding. Some dogs will lick it up greedily, but generally they seem to dislike the flavour.

OUR LETTER BOX.

Game Cock with Nailless Toe (*A. D.*).—The loss of the nail from the toe would not be a disqualification to your bird, although were the competition close, it would tell against him. If the toe becomes swollen and deformed, it would be useless to exhibit him.

Spanish Cock's Face Turned Red (*R. C.*).—The face of a Spanish cock will become rosy sometimes in very cold weather, but not *red*. There is no hope that a red face in an adult cock will ever become white.

Blisters on Face of Spanish Cock (*Newest Subscriber*)—The cases you name belong to a very common disease among Spanish fowls, especially cocks. The cure is easy. Dress every spot with compound sulphur ointment. While they exist the cocks should be by themselves, as the other birds peck the sores. Wooden floors are objectionable; first, because a fowl's foot is always kept in an unnatural position from the unyielding nature of the material; next, because they cannot scratch on it; and, lastly, because it is always damp and cold. As advertisers say, "One experiment will prove the fact."

Profitable Poultry Stock.—*Worcester* will oblige by sending his name and address to Mrs. Band, 3, Victoria Street, Pimlico, S.W.

Cochin-China Chicken's Leg Paralysed (*Nunquam Dormio*).—We give all our chickens strong beer at this time of year. If your chickens fast from dark till daylight it is too long, and may cause cramp or any other disorder. It is sixteen hours fasting against eight feeding. Take a candle and feed every night at eight and ten, or at the latter hour only. It will occupy only a minute or two, and they will learn to look for you as you do for your dinner. How many chickens has each hen? Discontinue the canary-seed and rice.

Poultry Keeping (*A Subscriber, Wexford*).—Six hens are not too many for one cock. There is no special keeping for fowls to be exhibited more than we state, fully in Nos. 685 and 686, which you can have free by post from our office for eight penny postage stamps. Generous diet and warm weather will restore your Spanish cock's comb to its natural red colour. [illegible] nothing to do with incubators. Tw[illegible] th[illegible] Cochin-China her[illegible] [illegible] stamps you can have free by post from our office, "The Poultry Book for the Many." It gives much information which you will find useful.

Game Hen with Swollen Head (*C. L. P.*).—Shut your hen up in a warm place, feed her on soft food and stale bread soaked in ale, wash her head with vinegar and cold water, and give her frequent doses of castor oil.

Legs of Golden-pencilled Hamburghs (*Green Legs*).—They must be blue; green legs would insure defeat.

Bumble Feet (*W. J. Gameboy*).—Your Game cock has this affection of his feet; it usually occurs in old birds which roost on high perches, and have brick floors to walk and fly down upon. We know of no remedy. To prevent the disease have low perches, and all brick or stone flooring covered with sand 2 inches or 3 inches deep.

Lice on Chickens (*E. H.*).—No application is better than flowers of sulphur dusted among the feathers. You surely might prevent their occurring by keeping your roosting-place and nests more clean. Have the whole thoroughly cleared out, and limewash the interior, having some flowers of sulphur mixed in the limewash.

Dividing Fowl-house (*Amateur*).—It is impossible to divide a pen (you call it a house), 8 feet long, so as to be healthfully used for two sets of fowls. You must build another similar pen in front of the present, and have a run (communicating with each) down the side of the wall enclosed with wire. This run could be used by one set of fowls during part of the day, and by the other set during another part of the day. Two cocks would not agree.

Incubators (*D. B.*).—We do not advise Cantelo's incubator at this season of the year. It is very successful in hatching, but it cannot rear; nor do we think any one can raise chickens without hens till the weather is warmer and the nights are shorter.

Corns in Feet of Aylesbury Ducks (*A Constant Subscriber*).—If your Ducks are kept on a paved or bricked floor the corns on their feet are accounted for. If the corns are really rooted on the feet there is no real cure for them; but if they be only just appearing touch them with caustic, and keep the birds as much as possible on grass. A Rouen Duck's bill should resemble exactly that of the wild Duck.

Sex of Goslings—Legs of White Bantams—Game Cocks Trimmed (*J. M.*).—You cannot distinguish the sex of Geese at five months old. White Bantams may be either clean or feather-legged, single or double combed, red or yellow ears. The clean-legged should have double combs. If white-legged, white ear-lobes; if yellow-legged, yellow ear-lobes. Game cocks are trimmed before they are sent to shows, but we are not aware that anything is done to their plumage.

Turkeys Roupy (*A. B.*).—Your Turkeys, from your description, are very far gone in the roup. Those that have the large lumps you mention it would be well to kill. For those that are lightly affected we would recommend an entire change of diet. Feed them entirely on soft food, oatmeal with onions chopped in it, and a little black pepper mixed with it. Do not let them have much water. Wash their heads and mouths with vinegar and water; and where the tongue is hard, white, and horny, trim it round with a pair of scissors. Baily's pills may be given with great advantage. The house where they roost must be kept clean. Give them strong ale.

Size of Hives and Supers, Advantages of Bar-hives, &c. (*A Suffolk Subscriber*).—1. Thirteen inches square by 8 inches deep inside, is a good size for stock-boxes. 2. We prefer supers of the same diameter, but varying from 8 inches or 4 inches in depth to the full-sized hive. One or more may be required according to the season. 3. The best communication between the stock-hive and a super is formed by two half-inch slits in an adapter near the sides as long and as wide apart as the diameter of the super will permit. 4. Among the advantages of bar-hives (which belong also to a greater extent to frame-hives) are:—The power at any time of making a thorough examination of every comb, thereby ascertaining at once if anything is wrong, and enabling a remedy to be immediately applied. Weak stocks may be rapidly strengthened by interchanging one or more empty combs for brood-combs from a strong hive. Food may be supplied in the same manner. The number of drones may be limited by removing all but a small portion of drone-comb, and substituting worker-comb in its place. Economy in wax, by enabling every bit of worker-comb to be turned to good account. Facility in making artificial swarms, as well as all other apiarian experiments. Bars should run from front to back. 5. Comb-bars are very useful in supers. When a comb is extracted, the side-attachments should be severed by a bent knife. Complete frames are preferable to the side-slips you propose, and should be kept three-eighths of an inch from the top, sides and floor board. The plan of double wood with a space between for air has often occurred to us, and although we have never tried it we are disposed to think it a good one.

Australian Grass Parroquets—Love Birds.—*A Correspondent* wishes to know whether Australian Grass Parroquets breed in confinement in this country, and to have some directions for their management, and what ought to be given for a pair. Also, the same information about Love Birds.

LONDON MARKETS.—February 17.

POULTRY.

As the time of year creeps on, the supply of poultry diminishes, and the lack of quality shows that the approach of spring is not without its influence. It is almost an imperceptible step from the pullet to the hen. It is but laying a few eggs, but it has great effect on the value. The end of the Game season and the opening of Parliament cause a slight improvement in trade, and, consequently, in prices.

Each—	s.	d.		s.	d.
Turkeys	0	[illegible]		[illegible]	[illegible]
Fowls	2	[illegible]		[illegible]	[illegible]
Smaller do.	[illegible]	0		[illegible]	[illegible]
Chickens	[illegible]	[illegible]		[illegible]	[illegible]
Ducklings	[illegible]	[illegible]		[illegible]	[illegible]
Goslings	[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]

Each—	s.	d.		s.	d.
Grouse	0	0	to	0	0
Pheasants	0	0	,,	[illegible]	[illegible]
Partridges	0	0	,,	[illegible]	[illegible]
Pigeon	0	8	,,	[illegible]	[illegible]
Hares	0	0	,,	[illegible]	[illegible]
Rabbits	1	4	,,	1	[illegible]
[illegible]	0	[illegible]	,,	0	[illegible]

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	FEB. 25—MARCH 3, 1862.	Weather near London in 1861.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
25	Tu	Pimelea decussata.	30.153—30.078	44—34	N.E.	·01	56 af 6	31 af 5	9 5	26	13 18	56
26	W	Salvia gesneræflora.	30.106—30.086	51 25	N.	—	54 6	32 5	37 5	27	13 8	57
27	Th	Helleborus lividus.	30.064—29.816	52—37	S.W.	.12	52 6	34 5	59 5	28	12 58	58
28	F	Chimonanthus fragrans.	29.785—29.745	51—36	W.	·91	50 6	36 5	sets	●	12 47	59
1	S	Acacia armata.	29.690—29.532	53—34	S.W.	·19	VI	v	1 a 7	1	12 35	60
2	Sun	Shrove Sunday.	29.927—29.619	52 40	S.W.	·04	46 6	39 5	12 8	2	12 23	61
3	M	Acacia incarnata.	29.850—29.540	53—35	N.W.	·01	43 6	41 5	23 9	3	12 11	62

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 48.8° and 33.7° respectively. The greatest heat, 64°, occurred on the 28th in 1846; and the lowest cold, 18°, on the 3rd in 1854. During the period 129 days were fine, and on 109 rain fell.

MISTLETOE PROPAGATION.

VERY quarter of a century there seems to be a mist about the Mistletoe, which comes lower down and rises with a tide-like regularity. Five and twenty years back, the backbone of the gardening of all Europe was bent down with the weight of the art and practice of sowing the Mistletoe seeds, of propagating the Mistletoe from a budding-like operation, and of grafting it exactly as Apple and Pear trees are grafted; and there was then a nursery not far from the heart of mid-England, in which standard Mistletoes were grafted, tied, untied, pruned, trained, and sold as regularly as any branch of the trade ever was or ever can be carried on, and the Oak tree was full of Mistletoe. The largest specimen on that tree was full 5 feet in diameter, and the last newest member who was elected as one of the Council of the Royal Horticultural Society is the owner of that tree.

I say our books and backs were then loaded with accurate accounts of all that, but now the subject is as if it were not, and there is yet one thing at least about Mistletoe which will be a new thing under the sun, if you believe what comes from under this cloud of mist. Even your humble servant could not resist the spirit of the testimonies to what was true of Mistletoe; and I grafted, budded, and sowed Mistletoe then, and put it all in black and white, of course, as I always did and mean to do to the end of the chapter.

There was a wave in the edge of the misty cloud about the birthtime of the old Cottage Gardener, and I recollect very well having had abundance of "private correspondents" in this country, and in Ireland, and one or two places in Scotland, for packets of fresh seeds of Mistletoe, from the front of the conservatory at Shrubland Park; and now I shall be a public correspondent asking how the seeds I sent behaved themselves. Probably if one had time to look over the first few volumes of that or this work, he would find all that is needful to be known about the Mistletoe and how to grow it. But once on a time the plague of my life was to discover a process by which to undo Mistletoe. I could not get rid of it anyhow, and I hold it in my creed that you cannot get free from it after it has been in possession of your trees a long while, without first ridding yourself of all the boughs and branches on which it has taken. You could overcome the vitality of Horseradish by not leaving a bud of it in the trenched ground. But the vitality of the roots of Mistletoe is such, that the ground itself, as it were, must be removed ere the roots cease the root action, which is beyond the power of the root action of any root in the ground.

Dear me! it seems but yesterday that Dr. Lindley and Mr. Loudon were preaching all this from the balcony of a hustings hotel to the independent electors of self-fame and glorification, and now we have none of them—a good job too, for self-glorification is as the mist of Mistletoe. Quite sufficient of it to get over one's nerves once in five and twenty years.

Well, the nursery at which Mistletoe standards were made and sold was at Great Malvern, near to the confines of Worcester, Hereford, and Gloucestershire, and not an individual in the three counties but knows Great and Little Malvern; so the doing was not done in a corner. Besides, Loudon has the very start of the practice in the "Gardener's Magazine" for 1837, page 206, and for the next two or three years the proceeding was not out of people's mouths. The nurseryman was Mr. Moss, and Mr. Moss was gardener at Eastnor Castle for thirty years. The first thing he did on the Mistletoe question, was to establish the truth of the fact that Mistletoe will grow on the Oak, by giving the Oak branch which was sent to the Horticultural Society's Meeting in Regent Street, through Mr. Loudon. It was the second largest specimen on that Oak, and there were several smaller ones. About two miles from Eastnor Castle there lived a master grafter of drink fruit, or victuals and drink, as the workpeople there say. Mr. Pitt of Little London, grafted other than fruit trees. He "grafted all manner of things," as he often told me himself, and he was then about the same age as I am now. He was the first who showed a gardener how to graft and bud Mistletoe, and the said gardener was the first person who taught Mr. Moss what he did with Mistletoe at Malvern. Little London, as you go from Ledbury to Gloucester, and three miles from the former, was then before big London in the matter of Mistletoe.

The Mistletoe was much more flourishing and fresh-like on that Oak than on any Apple tree in the country. But to make a short story of a long one, the middle of May is the *best time* to graft the Mistletoe, and from then to midsummer. The *best* grafts are three-year-old shoots of the Apple tree, with a seedling Mistletoe on it already from the sowing of a thrush or blackbird, and the best way to graft it is to cut off all the leaves of the Apple-tree graft, and to leave at least four eyes, or buds, before the Mistletoe seedling, and only as much wood behind it as will be sufficient to make the union with the stock and no more; to have it done 5 feet high from the ground, to clay the graft in the usual way, to moss the clay, and to keep the moss damp, and to have the Mistletoe seedling just resting or nestling in the top of the ball of moss. Another most particular thing is to have one or more shoots left on the stock and *above* where it is grafted, and to let that shoot have all its leaves on. If the weather is very cold, or very hot, or windy, put a brown paper cape over the ball and Mistletoe, and nineteen out of a score of them ought to grow by this, "the best way."

I have grafted the Mistletoe itself on a Balsam Poplar, the very first one I ever did, Mr. Pitt standing over me at the time. That was some time in April, at the height of the grafting season in that county. Grafting pieces of Mistletoe is like budding exactly, but make a longer and a wider slit in the bark, and make the Mistletoe stem in a flat wedge-shape on one side, and put in the flat side next the wood of the stock, as in budding. Tie, clay, and moss, and cape with brown paper, and you are in for it sure as he was, or Mr. Moss either.

To bud Mistletoe is merely to take a less piece than the graft, only one joint of Mistletoe, "having a bud and one leaf at the end," but clay it and moss it, and paper-cape it as if it were a graft.

Now, in respect to the subject which forms the text for this article—the sowing of the Mistletoe seeds in a slit made in the bark of the plant, or merely on the surface of the bark, without the slit. Both ways are equally good, for it is not where the seed is placed that the Mistletoe seedling plant takes hold. A much more curious thing occurs at the germination of the seed of a Mistletoe. Sometimes there is only one germ in the Mistletoe seed; in others there are two, three, four, or more germs, and each germ throws up a sucker on the end of a short stalk. The sucker then lays hold of the bark of the tree, and holds on to it for six, or eight, or more months, according to the time of the year; but it is from this sucker that roots penetrate the bark, and not from where the germination of the seed took place lower down. When there are more embryos than one in the one seed, there are as many seedlings from one seed as there are germs; for each germ, or embryo, has its own branch and sucker, and each sucker takes an independent hold for itself, and on the place it holds to a seedling plant is established. I have seen three good plants thus from one seed, and each of them was half an inch in advance of the seed itself.

The seed of Mistletoe will vegetate on the bare handle of a house-broom quite as readily as on the bark of an Apple-tree branch. If you fasten it with a bit of putty on a deal board, moss, and moisten it early in the summer, it will also vegetate on the board or on a bar of iron; then it dies, for the suckers at the end of the roots, as you may call them, find not a proper place to fasten to.

The belief and notion on this subject were very different from what is stated at the time referred to—five and twenty years back. They amounted to this, as far as I recollect: That Aristotle and Pliny among the ancients, and Dr. Walker among the moderns, considered that the Mistletoe was propagated by the excrements of the birds which had fed on the berries, supposing that the heat of the stomach and the process of digestion were necessary to prepare the seeds for vegetation. Ray first suggested the idea of trying by experiment whether the seed would vegetate without passing through the body of a bird; and at his suggestion Mr. Doody, an apothecary of London, inserted with complete success a seed of the Mistletoe into an incision made in the bark of a White Poplar tree which grew in his garden. This, Professor Martin observes, has been since done by many persons, both by rubbing the berries *on* the smooth bark of various trees, and by *inserting* them in a *cleft* or in a *small hole* bored on purpose, which was the mode adopted by Doody, the first person who really sowed this seed. The celebrated Du Hamel, arguing that the seeds of the Mistletoe, like the seeds of other plants, would germinate anywhere, provided they had a suitable degree of moisture, made them sprout not only on the bark of different kinds of living trees, but on dead branches, on bricks, tiles, stones, wood, and iron, down to mother earth; but though they germinated in such situations, they did not live any time except on the bark of living trees. M. Du Trochet made seeds of the Mistletoe germinate on the two sides of the frame of a window, and in both cases the radicles directed themselves towards the interior of the room, as if in quest of darkness.

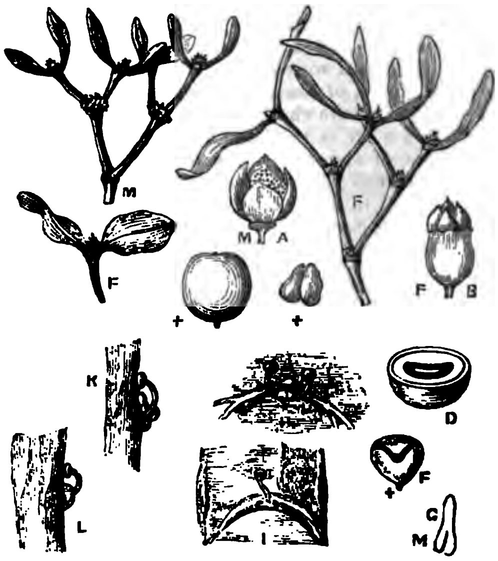
These were the things which we, who wrote in 1837, believed in, but the italics are mine; and it was fresh in our memory that Mr. Baxter, of the Oxford Botanic Garden, had in the spring of 1833 rubbed nine Mistletoe seeds on the *smooth bark* of an Apple tree, all of which germinated. Two of them produced only one radicle each, six produced two radicles each, and one produced three radicles; and when you know there is an embryo, or germ, in the seed of a Mistletoe for every radicle it makes, you may take my word for it that each of these germs makes a seedling plant. From the experiment in the Botanic Garden at Oxford, you may also learn that two seedlings from one seed are more common than either one or three.

[illegible] I do not suppose for one moment, that [illegible] who lived on the other side of five and twenty years back, and knew all that and talked of it among ourselves, can help now being grieved to hear what Dr. Lindley would call "exaggerated nonsense," from the mouths and pens of men as good as ever any of us aspired to, just because folly seems, in some instances, to be less an exaggeration than the real truth? But the profit to you is immense. "Exaggerated nonsense" is by such discussions got rid of altogether, and whatever good is in the story you have it pure and simple without exaggeration of any kind, good or bad, and the good you will have out of this true story will never get out of your mind as long as you live; that good thing is, the knowledge that our craft, rightly applied, will cause a seed, even the seed of a Mistletoe, to germinate and sprout on the face of a bar of cast steel in the bottom of a crinoline; and surely, then, no one can fail to do it where it ought and how it ought to be done. You have the "how" from the great physiologist Du Hamel, "a suitable degree of humidity," or, if you like our way of putting it, which is the right way of doing it, have a ball of moss, always as damp as his "humidity," all round the seed to vegetate, and by keeping a nightcap of brown paper over it the while, you lessen the need of so much water to the moss. Some people are so plain in their senses, that they think a seed must grow because it is sown. But you see there are conditions essential to success, even if you sow in a pot or out in the border—so much heat, so much of constant moisture, and so much shade, and more of it if you choose. But these three conditions must never be absent, nor any one of them, in turning Mistletoe seeds into seedlings, or grafts or buds of them into plants.

D. BEATON.

[In illustration of Mr. Beaton's communication we extract the following from "Loudon's Gardener's Magazine" for 1837, page 209:—

"The first indication of germination is the appearance of one or more radicles, like the sucker of a house-fly, but larger; as at *h i*, which are front views, and at *k l* in the same figure, which are side views, taken from Mistletoe berries which were stuck on the upright trunk of a Cherry tree in our garden at Bayswater in March, 1836, and germinated there, as they appeared on the 20th of May of the same year. When the white, viscous, pulpy matter of the Mistletoe berry is removed, the kernel, or seed, appears of a greenish colour, and flat; sometimes oval, at other times triangular, and at other times of various forms. *a* Is the male blossom magnified; *b*, the female blossom magnified; *d*, a berry cut through transversely; *e*, a seed divided vertically, showing the two embryos; *g*, the embryo magnified; *h*, the two embryos, with the two radicles germinating; *i*, a single radicle; *k*, a side view, or section, of the two radicles; and *l*, a side view, or section, of the single radicle.



"It is remarked by Du Hamel, that, when the form of the seed is oval, generally one radicle only is protruded; but, when it is triangular or irregular, two, three, or more appear. It is singular that, while the radicle of almost all other plants descends, this is not the case with the Mistletoe; the young root of which at first rises up, and then bends over till it reaches the body of the substance to which the seed has been attached, as at *k* and *l*. Having reached that substance, the point of the radicle swells out like the extremity of the sucker of a house-fly, or, according to the comparison of Du Hamel, like the mouth-piece of a hunting-horn."]

A FEW NOTES ON VEGETABLE CULTIVATION.

As the cultivation of the most important vegetables has been given in detail in the preceding volumes of The Journal of Horticulture, it is needless here to repeat what has already been told. The following notes will, therefore, be more especially directed to certain features, which it is strongly advisable for the inexperienced to keep in view, supposing at the same time that he is versed in the ordinary routine of sowing, planting, and the other etceteras, which after all form the basis of all our undertakings, however skilful or ingenious the further operations may be. In the vegetable department, however, simplicity is the order of the day; and the remarks here given will be necessarily brief, except in cases where a more explicit treatise seems required, and these will be few:—

Beet.—The White or Green Beet, of which the top instead of the root is used as a salad, has so fallen into disuse since so many other plants of greater repute have sprung up to supersede it, that its culture need not be enlarged on here; but the Red Beet of our gardens, of which so much has been said in former times, and which is far from always being a perfect article now, requires some remark. So much uncertainty hangs over uncertain seed that Beet of the best quality is not always forthcoming when wanted, neither is the appearance of the plant when in a growing state at all a proof that it is likely to furnish good well-coloured roots. I had a good example of this the past season, having two plots of Beet, one with a short top of a deep purple crimson, and plants of uniform growth; the other with a much longer foliage, which in colour was not much darker than ordinary Mangold Wurtzel, being a sort of brown and green streak, and ordinary observers would have predicted a very indifferent article; but it was quite the reverse, being much superior to the other dark-coloured short-topped variety—in fact, it was as good a quality of Beet as I have seen for some years; while the other was bad-coloured and indifferent. So much for appearance in the growing season; and I record this in order to warn the inexperienced against being led away by first impulses, as only an examination of the root itself can determine a good quality, which, as is well known, consists of a dark crimson tuber, free from veins and streaky places; the root need not be too large, as generally a large-sized one is faulty.

Beet need not be sown until the middle of May, unless the season be an unusually forward one, and in that case it may be sown by the 1st of that month. At the time of sowing in the open ground, it is advisable to sow a box or a few pans of the same sorts and place them under glass, as Beet is liable to so many mishaps when in the seed-leaf: thus the crop has frequently to be succeeded by planting, and a few in reserve are useful. It will require thinning at the proper time, and in autumn must be taken up before severe frosts, which destroy it, the plant being more tender than the Carrot or Parsnip. In the growing period, however, it requires but little attention.

Borecole or Kale.—Every year gives us an addition to this useful and numerous family; at the same time some of its members drop off, those in the ordinary lists of 1862 do not much exceed in number those of 1852, or before. One or two old favourites, however, still retain their place—the old Curled Green or Kale, certainly the oldest member of the family, and still deserving cultivation alike for its appearance, hardihood, and table properties. Then we have Cottager's Kale, a very useful and prolific variety; Asparagus Kale, so called from the young shoots when denuded of leaves boiling and eating something like Asparagus, is also a favourite with many. Chou de Milan is second to none for delicacy at table when in good condition; but it is less hardy than some other kinds, while, perhaps, the most hardy of all is that section which has sprung from the old Ragged Jack of our forefathers, one called Buda Kale being certainly an improvement; but this class has fallen into disrepute, except, perhaps, in very exposed cold places. Then there is a variegated Borecole, containing when true all the colours of a rainbow; unfortunately it is apt to sport, but when true is much sought after for garnishing. Some other varieties might be added; but the above are sufficient to represent an important family, to which Brussels Sprouts stands in the character of first cousin, but this will be treated of hereafter. Suffice it to say that all the members of this household like good living, and make the best return when treated to the fat of the land. Sow as early in the spring as the nature of the ground will allow, and plant out in shallow drills made by the hoe, not less than 2 feet apart each way; an earthing-up afterwards will be of service. The remaining features of their treatment have been already treated on in former articles, and need not be repeated here.

Brussels Sprouts.—The vagaries of trade, or, perhaps, the waywardness of buyers, has at length contrived to make one or two varieties of this useful article, seed lists containing somebody's Improved, as well as home-grown and imported seed. This is certainly not to be found fault with, as a degeneracy might take place if there were no emulation in supporting rival claims. However, as every one knows a good Brussels Sprout, it is needless to say more than to advise those who grow this vegetable largely (and every one ought to do so, for there is no winter green so profitable), to sow a portion of all the kinds, and keeping them separate, mark the result when autumn and winter come on, and another season only grow the kind that proved best. Generally speaking, I plant as many Brussels Sprouts as of all the varieties of Kale united, for a dish of Brussels Sprouts may be had in all weathers, from October to April, and they often have to act as a substitute for all of them, and in very severe winters for Broccoli too. It is, therefore, proper to say, that too much cannot be said in favour of this plant. Its cultivation is much the same as that of Kale, only it might be allowed a space of 30 inches each way, if the ground be very good. We need hardly say that stripping off the leaves from the stem in autumn, as is sometimes done under the plea of giving the little hard Cabbage-formed heads a better chance to grow, is a very bad practice, and is sure to be attended with reverse consequences, as Nature has pointed out a duty for these leaves to do, after which they fall off. It is, therefore, barbarous to forestall this necessary operation.

Beans (Broad).—Hardy, prolific, and everybody's money, this vegetable is somehow despised in the gardens of the wealthy, and thrust into some obscure place where nothing else will grow—most likely under trees. Fortunate it is, that it is so accommodating, and also so grateful; but it is much more so when it is duly honoured with an open, favourable space. But we must leave this to the management of the cultivator; and to the inexperienced it is right to say, that so accommodating is the Broad Bean, that it will stand the winter tolerably well when sown at the end of November, or what will answer the same purpose better, a few pots may be sown in February and placed in heat, and the plants gradually hardened off. They will plant very well in March, and produce a good and early crop. Succession crops may be sown in the open ground as wanted. The best for early use is the Longpod, but the large Windsor is more esteemed at table, and late sowings might be of this kind. Do not plant too thick if the ground be rich, and it is not bad practice to nip off the points of the stalks when they indicate getting too high, as the lower blooms set better. Broad Beans are essentially a cottager's crop, from their not offering so much temptation to birds as Peas do. It is also more remunerative, producing a greater amount of food than its more popular compeer, and in its growth requiring no stakes, unless when by the side of a path, in which case a few upright stakes and a string might keep them from hanging over. The other features of their treatment have been detailed elsewhere.—J. Robson.

(*To be continued.*)

GERANIUM BIJOU AS A BORDER PLANT.

Your correspondent Mr. Robson invites attention to "striped borders, and suitable plants to make them with," and says he shall be glad to hear of any addition to his, I think, complete list of plants for the above purpose. I have no new plant to recommend; but, seeing he places Geranium Bijou rather high in his list, as he describes it as the best of the Scarlet-flowered variegated-foliaged kinds, I beg to add a few words in its favour. I have grown it extensively for the last three years, and find it to be the best of its class; it is a free striker either in spring or autumn, good doer, will bear packing very close in winter without the leaves fogging (a great desideratum), as hardy as a common Scarlet, and if grown as a pot-plant will furnish bloom of irreproachable scarlet all through the winter. I have it in bloom now, and shall be happy to show it to any one interested in these matters. Everybody knows and approves of Brilliant, but for very apparent defects as to foliage. Bijou is with me as free-blooming as Brilliant, with much larger flowers, and first-class variegation. And now, having sung its praises, let me add a word about its one defect—its legginess. This may be entirely done away with, by pruning back the autumn-struck cuttings in the spring to one or two eyes above ground. If the tops are put in a gentle bottom heat, they will strike with very little trouble, and make as good or better plants than their parents. The plants pruned back will break out strongly, and also become bushy and strong before bedding-out time arrives.—H. B.

HEATING BY HOT-WATER PIPES.

I HAVE a small lean-to conservatory at the back of my house, facing north, about 32 feet by 12 feet, and 12 feet high at the back. It is very imperfectly heated by small pipes on Perkins' principle, and the cost of fuel is out of all proportion to the heat obtained. Would one four-inch pipe all round answer to warm it in winter for Camellias, Azaleas, &c.? and would there be much difference if the pipes were laid above the floor, or under a grating all round?—R. C.

[We think there must be some fault with the damper, the ash-pit door, the firing, or not enough compression on the small pipes, to cause such a waste of fuel. Of course, the small pipes cannot act as expected unless they become very hot from compression of the water, and the hotter they are the greater the danger. Nothing would induce us to risk using that system. The single four-inch pipe all round will keep such a house safe for what you say, but will not be enough to force much. In taking such a single pipe all round, one-half or two-thirds must act as a flow, and the rest as the return, the piping rising gradually for the flow—say 2 inches or 3 inches, and then sinking to the bottom of the boiler. An open gas-pipe should be inserted in this highest point, and the end left open 5 feet or so above the pipe. The piping will have most power if exposed, but for what you state it will do well enough under an open grating. Of course, you will have a supply-cistern for the boiler, whatever kind of boiler it be.]

NOTES ON A FEW TENDER AQUATICS.

(*Continued from page* 378.)

ERIOCAULON (Pipewort).—This genus contains species which are, perhaps, more curious than beautiful. *E. fasciculatum* is a stove annual of dwarf habit, bearing white flowers, and is a native of Guiana. *E. australe* is a greenhouse perennial, but possessed of little beauty. They thrive to perfection in turfy peat and chopped sphagnum, and the pots set in shallow water. The annual one propagated by seed; the perennial one by division of the root.

HERPESTES ERECTA and MONNIERIA are both very handsome. The habit of the former is erect, with cordate leaves, and produces pretty blue flowers in August and September. It is indigenous to Brazil, and some of the West India islands. *H. Monnieria* is of a trailing decumbent habit, with cuneiform leaves, and, like the last, has small pale blue flowers. It is a native of various countries, China, and America both North and South. Both of them are reputed stove species, but I have known the latter flower very well indeed in a warm greenhouse. They require rich soil, and to be set in only a few inches of water. Propagated by division of the roots.

HYDROCERA TRIFLORA is an annual, with piped floating stems rising 2 feet above the surface of the water. It is remarkable for the colour of its flowers, which are variegated with white, red, and yellow. It is very showy and attractive. It is a native of the East Indies. It requires a moderate-sized pot and rich soil, and the pots half immersed in water. Increased by seeds, which should be sown in April.

PISTIA STRATIOTES, or Water Soldier-like Pistia, is a stove perennial of rather a singular habit. It floats on the surface of the water, but does not attach itself to the soil—in the latter particular resembling the genus Lemna or Duckweed, so common in ditches and pools of stagnant water in this country. The leaves are somewhat obcordate, and it produces white flowers [illegible] about the beginning of September. It is propagated by merely pulling it to pieces, every bit forming a plant. It is indigenous to the East Indies.

HETERANTHERA ACUTA comes to us from Virginia, and *H. reniformis* from South America. Neither of them are possessed of much beauty. The former has white flowers, and will succeed in a greenhouse. The latter has reniform leaves and blue flowers, and requires stove heat. They should be grown in pots of good rich soil, and set in shallow water. Increased by division.

VICTORIA REGIA has no rival—no equal, amongst aquatic plants: indeed it is hardly exaggeration to say that it is the finest plant in nature. Doubtless all have at least heard of this magnificent Lily; but as all may not have seen it, a brief description of it may not be without interest. It is a stove perennial plant, with floating leaves of almost fabulous dimensions—5 feet to 6 feet in diameter, the margins of which are turned up all round, forming a sort of rim from 2½ inches to 3 inches deep. They are of a deep reddish colour beneath. The flowers are at first white, shading off to pink, and of a deep rose in the centre, and a foot in diameter. It is a native of Guiana and neighbouring countries. The plant was raised at Kew in 1846. It requires a great deal of space, and to be grown in rich muddy soil. It should be kept dry in winter; and when they begin to grow increase the depth of the water gradually until it is considered sufficient, which will not be less than 3 feet. It can be increased either by division of the root or by seeds. If by the latter mode, they should be sown in a temperature of not less than 84°.—J. DUNN.

NAMES OF THE BEST 24 HOLLYHOCKS, IRRESPECTIVE OF PRICE.

Advancer (C.), blush, with rose.
Cloth of Silver (C.), white, purple base.
Countess Russell (C.), rosy peach.
David Foulis (D., L., & L.), lilac.
George Keith (D., L., & L.), rosy scarlet.
Invincible (C.), rosy salmon.
Joshua Clarke (C.), crimson.
Lady King (C.), ruby red.
Lady Davies (D., L., & L.), rosy salmon.
Miss Lizzie King (C.), yellow.
Ne Plus Ultra (C.), rosy lilac.
Prince Albert (C.), crimson salmon.
Stanstead Rival (D., L., & L.), salmon rose.
Triumphans (C.), lilac.
Lady Braybrooke (C.), fawn and pink.
Leonora (C.), crimson.
Alice (D., L., & L.), primrose.
Regina (C.), clear pink.
Empress Improved (C.), straw, chocolate base.
Mr. B. Cochrane (D., L., & L.), rosy crimson.
Purple Prince (Roakes), purple.
Senator (D., L., & L.), deep crimson.
Madingley Perfection (C.), deep crimson rose, with dark base.
Agenora (C.), rosy lilac.

(C), Chater; (D., L., & L.), Downie, Laird, & Laing.—H. H. D.

COCOA-NUT FIBRE REFUSE.

IN answer to "A. A. A." we reply, yours is the second sample we had sent us this week of what is as far from the real stuff as Drogheda is from Kingston-on-Thames—the only place in the three kingdoms where it is made, and there it is worked under a patent, firm as Chancery Lane. What you sent, and what we had from Bury in Lancashire, is the refuse of the mat-makers and brush-makers, and is entirely and altogether the very worst thing under the sun to pot Ferns in. Pray unpot yours ere you lose them. We said, or rather Mr. Beaton has often said, that the cocoa-nut fibre refuse for potting is like mahogany sawdust; but it is finer in the grain and in the touch than the finest sawdust, and as soft-like as sifted peat with a lot of the fibre left in it. You can only get it to Ireland through some great London nursery. A horseload of it costs only 2*s.* at the mills; but the expenses attendant on carriage are heavy. When the refuse is put through a cinder-sifter, and one third of its bulk of the finest cinder ashes is added to it, and well mixed, the mixture is the best for plunging pots in over a warm hotbed, and for all sorts of plunging for propagation. The Crystal Palace Directors are about trying it for recovering the roots of their large Orange trees, after the leaves and roots were poisoned with gas. Mr. Eyles, for the Royal Horticultural Society, is to have it for plunging purposes to begin with: therefore we shall soon hear of agents enough for it in London and other chief cities. And all this has arisen from a chance private letter we had from a clergyman below Bristol a few seasons back, and which was noticed in these pages.

LUCULIA GRATISSIMA.—In your Number of January 21st is a description of this beautiful plant growing at Cavan, Ireland, covering a trellis 12 feet by 8 feet. You remark, "Ireland has now thoroughly beaten old England in this instance." This is an error. At Thorp Perrow, near Bedale, Yorkshire, the seat of M. Millbank, Esq., the back of the span-roofed conservatory is completely covered with a plant of Luculia gratissima. It is trained up the back rafters and is coming down the front, and annually produces four times the quantity of blooms that the Irish plant does. It is one of the best rafter plants I know, and stands the knife well.—Ebor.

ROYAL HORTICULTURAL SOCIETY.

February 18th.

Fruit Committee.—A Meeting of the Committee was held on Tuesday, the 18th inst., Mr. Edmonds in the chair.

A seedling Grape called *Shakespeare*, was received from Mr. Butcher, nurseryman, of Stratford-on-Avon. It is a seedling raised between Champion Hamburgh and Barbarossa, but it is perfectly distinct from both. The bunch is long and tapering, like that of the Barbarossa, and the berries, instead of being round as they are in that variety, are quite oval. The skin is very thick, and the flesh is firm, richly-flavoured, and with a fine piquancy. It was thought highly of by the Committee, and was requested to be sent again. Mr. John Richards, gardener to Lord Londesborough, of Garnstone Park, Tadcaster, sent a box of New Black Hamburgh Grapes, which were small in the bunches; the berries were of good medium size, and well-coloured, but the flavour rather acid.

Captain Tyrrell, of Fordhook, near Ealing, sent specimens of two Apples that had been exhibited at previous Meetings for the purpose of ascertaining their names, but they were not identified. C. W. Strickland, Esq., of Hildingly, also sent several specimens of Yorkshire Apples.

The seedling Apple sent to last Meeting by Mr. Templer, of High Acworth, near Pontefract, was again submitted, but it was not considered of sufficient merit to obtain a Certificate.

A dish of the fruit of Granadilla (Passiflora edulis), was sent by Mr. Lamb, Osmaston Manor, near Derby. They were fine fruit and in good condition, but their qualities are such that they did not find favour with the Committee as a dessert fruit.

A box of l'Homme-Lefort grafting wax was sent by Dr. Lindley, and remitted to the garden at Chiswick for trial.

Floral Committee.—Owing to the alterations necessitated by the Exhibition works, this Meeting was held in the conservatory, from whence one could see how thoroughly the great building has spoiled the grounds. Its immense size has dwarfed them into a mere bit of pleasure ground attached to it; while the wretched condition of the Portugal Laurels, and some of the Conifers, clearly seems to tell the tale that nothing but deciduous things can be relied upon, and when we get the great steam engine at work, and all the machinery for the refreshment department moving, what the result of such an invasion of the blacks will be it is not difficult to foresee.

The number of subjects sent in was not large, and mainly consisted of Orchids and foliaged plants. A pale variety of Cattleya Trianæi was exhibited, but was not considered worthy of any special notice, although a finely-grown plant.

Two plants of the fine variegated Phalænopsis Schilleriana, from Manilla, were exhibited by Mr. McMorland, of Haverstock Hill, and Mr. Warner. It was unanimously adjudged a First-class Certificate (it had been previously shown as a small plant by Mr. Bull, of Chelsea). The leaf is larger than amabilis, of a dark olive green, and dull whitish markings on it. The flower is of a white colour, with rosy pink markings. Altogether one of the finest things in Orchids introduced for some time.

Mr. Veitch sent a plant of Lælia elegans, from St. Martha, and a collection of Lycastes, showing the great variety of marking which they exhibit.

Mr. John Standish, of Bagshot, sent (in a weak state) a new Lily from Japan. The colour of the flowers is a pale straw colour, with dark chocolate-coloured spots, reflexed in the way of the Martagon Lilies. It was considered not to be in sufficiently good condition to warrant notice, but will, doubtless, be brought forward again. It will be hardy, and should be grown out of doors in some good, deep peat, when I think it will prove to be an acquisition.

From Mr. Bull came a fine Fern, called Cibotium princeps, with magnificent fronds. It was awarded a First-class Certificate. Also Oreopanax dactylifolium, a fine-foliaged plant, which received a Label of Commendation. Also, Rhophala crenata, Anthanium acaule, and some semi-double white Primroses, the latter having come true from seed.

An interesting discussion arose as to the omission of certain florists' flowers from the schedule, of which one may have to say something next week, perhaps. Very strong feeling was manifested as to the injustice of the omission.

HERBACEOUS PERENNIAL FLOWERS.

This class of plants is now often inquired about. Many ladies, and gentlemen too, are desirous of growing them extensively, in order to avoid the trouble and expense necessarily involved in the bedding-out system. Where the family is at home all the year round, great expense must be incurred to keep the beds and borders furnished with plants if the bedding-out system is fully carried out, or else the beds will be bare and, of course, unsightly from November to June; whereas, a border of herbaceous plants, after the first expense, is easily and cheaply managed, and is always interesting throughout the whole year. Without entering into the merits or demerits of the old system of, as Loudon calls it, the mingled flower garden, or the more recent and fashionable mode of furnishing a flower garden in masses of half-hardy plants, permit me to offer a few remarks on the old-fashioned border flowers, yclept herbaceous perennials, which, if well grown and properly arranged, will always have a goodly display of flowers from February to November. Such a border is suitable for gardens of all sizes, from the cottage to the palace. In such a border the object would be to select kinds that produce abundance of flowers, last a considerable time in bloom, possess attractive colours, and that are hardy enough to bear the variations of our climate without much trouble in protecting them from the effects of frost. Many years ago I formed and arranged such a mingled flower-border, which gave great satisfaction to my employers, and was much admired by every one that saw it—especially such visitors as were in the habit of seeing the place during the whole season. I had not so many species to work with then as there are now in cultivation: hence the cultivator of the present day has the means of far surpassing the border that I planted then.

By herbaceous perennial flowers I mean such as are neither biennials nor annuals, nor yet such as are designated florists' flowers. Hardy bulbous species, to some extent, I would admit into my selection or pattern.

In large places, even where the bedding-out system is fully carried out, a border of herbaceous perennials, such as I shall describe presently, might be found a place for, just as in such gardens they have separate situations for a rosery, an American garden, or an aquarium of hardy flowering aquatic plants. In gardens of smaller extent this flower-border might form a principal feature backed with evergreen and flowering shrubs; and in villa and cottage gardens it would be all-in-all.

In most gardens the herbaceous flower-border is such a mingled irregular mass of subjects that it very rarely presents an agreeable appearance. Sometimes there is a fair show of flowers here and there, but the mixture is so incongruous that the eye of taste turns away from it—I would not say in disgust, but certainly dissatisfied. The reason is that there is an absence of order and regularity. It is a confused assemblage of objects which, however beautiful individually, are so jumbled together that the effect is spoiled as a whole. That state of herbaceous borders led, no doubt, in a great measure to the adoption of the massing system, which, at certain seasons of the year is exceedingly showy and effective.

These faults in arranging the mingled flower garden I shall now endeavour to correct by first giving a routine of management, which consists in preparing one border, planting and transplanting, stirring the soil, manuring, keeping the plants neatly tied to supports, thinning the shoots, watering, cutting down when done flowering, propagation, and lastly, arrangement, which includes a select list of the best kinds to produce the best effect. Under each of these heads I shall briefly but sufficiently describe what I consider the best modes of carrying them out in practice.

Preparing the Border.—This may be of any length the owner chooses. It may be bounded by a hedge of Roses or Sweet Briar, or even by an espalier hedge of fruit trees, or by a shrubbery. A walk of any convenient width may run down the centre; thus there will be a border of flowers on each side. The width of each border should be 7 feet, which space will hold four rows of plants. The first row at the back will be

2 feet from the boundary; the second row, 2 feet from the first; the third row, 1½ foot from the second; and the fourth or front row, 1 foot from the third and half a foot from the edging of the walk. The objection to a wider border is that the row of flowers at the back is too far off the eye to be seen well; and the objection to a narrower border is that the tall-growing species will overshadow the dwarfs in front. The first thing to do, after setting out the borders and the walk, is to form the latter, cutting a deep drain down the centre, and laying cross-drains across each border into it; then make the walk in the usual way; and, after that, trench the border as deep as the soil will allow, adding to it a good dressing of leaf mould, very rotten dung, and sandy peat, in equal quantities. If sandy peat is inaccessible then use as much river or pit sand that has no iron in it; mix this dressing well with the soil, and the borders are ready for planting.

Planting and Transplanting.—I use both terms advisedly, for a reason that I shall give by-and-by. The best season for planting the herbaceous-plant-border is March; but for bulbs, the time I always adopted was October, more especially for the Lily tribe. If possible, strong plants of all the species should be planted, in order to have a good fair bloom the first year, though I always found the second year's bloom more abundant and finer in quality. It will sometimes happen that some of the plants will not thrive well: hence it is a good plan to have a reserve garden in some retired nook or corner; and there I would keep several plants of such species as are either tender, or from some other cause likely to fail in the garden. If these are kept in moderate-sized pots, then, whenever a vacancy occurs that vacancy could easily and quite safely be filled up from the reserves. Some species, however, do not thrive in pots—such should be planted out in reserve-beds, and transplanted with a hollow spade, or tool as the navvies term it. The transplanting would be performed even better and more safely by two men each having one of these hollow tools. The object is to move them with as much soil adhering to the roots as possible. Have the holes ready made and drop the ball gently into them, filling-up with the soil removed, and then give a good watering. With this care in transplanting the plants would scarcely feel the removal.

The Distances in the Rows.—The plants in the two back rows being in general strong growers, I plant them 3 feet apart in the row, placing the second alternate with the first. The third row being both less in height and generally in width, I allow 2 feet between each; and the fourth or front row being still less, 1 foot between them is sufficient. When all are planted the soil should be forked over, broken fine, and so left. By no means rake it, for that makes the surface too fine, and the soil is then liable to become cakey on the surface and often cracks when dry weather comes, letting out moisture and admitting drought to the roots.

Stirring the Soil.—During the summer the Dutch hoe should be very often used—not only to destroy weeds, but also to keep the surface loose and friable, and should it ever become hard then give it a shallow forking over with a five-pronged fork for the back row, and a three-pronged fork for the front rows. This frequent stirring of the soil is highly advantageous to the plants, besides giving a freshness and neat appearance to the borders. Yet how seldom is it done! In most places a mere shallow hoeing to cut up the weeds, and then a raking to clear them off, is all the treatment nine-tenths of the herbaceous borders receive.

Yet if Potatoes, Cabbages, Turnips, and other vegetables are benefited by deep hoeing or forking, surely flowers will enjoy and be benefited by such operations equally as well.

T. Appleby.

(*To be continued.*)

Skerry Blue Potatoes.—Skerry Blue Potatoes receive their name from a mountain in the neighbourhood of Ballymena. A farmer in its vicinity found a few Potatoes in a barrel of Riga flax-seed; these were planted, and now their produce is known as the Skerry Blue Potato. In the district of their original Irish home they are, I think, more extensively cultivated than, perhaps, any other two sorts. I have grown them for five or six years, and always found them proof against the disease, good croppers, and, when well kept, excellent for table. They are naturally of a small size, and inexperienced cultivators are liable to err in planting too close. They should have 15 inches in drill, [illegible] inches between drills. [illegible] attending to this and giving them the usual working, I have had, under ordinary circumstances, a good crop of sound-eating Potatoes.—C. O., *Belfast*.—(*Irish Farmer's Gazette.*)

TANK IN A GREENHOUSE.

I have a greenhouse some 20 feet by 15 feet, heated by hot water and a flue. The fireplace is at the back, the flue running along the back, with a chimney in the corner. The water-pipe runs along one side and the front, then turns into a stone propagating-tank, and so the water goes back again into the boiler. I had this tank for the purpose of propagating cuttings, which I must say succeeded admirably. However, my gardener complains that the plants in the house lose their foliage, and are apt to damp and mildew. He says it is entirely owing to the tank, which being of stone, and porous, allows the damp to exude, and he is very anxious to do away with it and the propagating-bed altogether, putting an iron return-pipe in its place. This I am very loth to do, as the convenience and use of the propagating-bed are very great. Will you advise me in the dilemma?—Robertson.

[Is your tank securely covered to prevent the damp rising that way? If so, then the porosity of the sides might be neutralised by painting it with thick paint when dry. We should be more apt to attribute the damping and mildew to a low temperature and a deficiency of air. We think the pipe and the flue ought to do more than neutralise what vapour might escape from the tank. However, if you please the gardener by having a close return-pipe, you may take that through your tank, and instead of water fill it with rubble, such as stones, &c., above the pipe, and then with sand, &c., and you will have your propagating-bed just as before. If the arrangement of the house permitted, you might also have a propagating-bed round and over the flue near the furnace. It strikes us, however, more ventilation, and a little more heat in consequence, would satisfy all parties. You may keep a moist atmosphere about the cuttings by covering them with glasses.]

NEW PINE APPLE.

The new Pine called, from the province in Brazil where it is found, Abachedies, has been sent to Raby Castle, and is one of the greatest acquisitions to this class of fruits.

The fruit is a perfect cone, the pips large, their colour at the base deep crimson shaded off to dark orange; the flesh is deep yellow, very juicy, and tender, and in flavour cannot be surpassed. It is a dwarf grower, and possesses the good property of keeping some time after being cut. Those who have had an opportunity of seeing the fruit pronounce it first-class. Average weight 6 lbs. to 8 lbs.—Ebor.

THE CULTIVATION OF POTATOES AND OTHER CROPS.

"My Potatoes are rotted as well as other people's, and I don't see why you should be favoured more than the rest of us." "Well, Mr. G——, in order to convince you, come and see mine." "No, I wo'n't, or be convinced either!"

Thus ended a palaver with a neighbour some nine years ago, and, of course, no more could be said; but if the gentleman had remained to be my neighbour up to last year (and so far as the Potato disease in gardens was concerned I never knew a worse one), the result and the observations would doubtless have been the same. I did secure a very good crop last year; and as I am now about preparing for planting again, it may not prove unwelcome to many if I give my method of proceeding in detail.

I made known long ago in the old series that I keep my seed in a cellar averaging 40° to 50°, in a subdued light, and spread out singly in layers on wooden trays from the day that I take them up till I want to plant them, when they will have become furnished with stout sturdy shoots firmly attached. When I plant, at each end of a row opposite to the sets I drive down a substantial piece of stick to remain there till the following year, in order to point out that the tubers of next year shall not occupy the site of this. I never use raw manure. Quicklime or mortar rubbish, which is spread over the surface soil, and slightly worked in just before planting at the beginning of March, is what I prefer.

For early Potatoes I allow 36 inches between the rows, and for store Potatoes 42 inches quite. Strain a line from two pegs where the rows are to be, and place the sets upon the surface of the soil, at 1 foot distance for the earlies and 15 inches at least for the late sorts. I always use middling-sized whole sets. Then readjust the line to the full width of the spade, and mark out for a trench centrally between the two rows of Potatoes. Cut down in order to leave the sides even, and cast out every other spadeful right and left, though not exactly plump on to the shoots of the sets. The crumbs that are afterwards shovelled out take that central position harmlessly; and we then have a trench formed nearly a good spit deep, which is intended to become occupied with the Cabbage tribe anon. Formerly, as each trench was finished I used to introduce raw dung, and dig that into the bottom; but now I merely dig the bottoms of the trenches, as, having a large supply of liquid manure (house-sewage), I use it bountifully instead when the plants have attained to good size. I use McDougall's, of Manchester, patent disinfecting powder as a deodoriser, and otherwise than for this purpose it is a good and effectual remedy. In digging out the trenches for the early Potatoes I do not make the spade bite quite so deeply as for the later varieties, and I prefer the Cauliflower and Grange's Broccoli to take their stations between the former.

Eleven years ago, when I first began to feel my way on this ridge-and-trench plan, poor old Brotherton declared that I "was going to grow Potatoes upon raised banks sufficient for a Norman encampment." But he was an old soldier, and, I fear me, sometimes shot with a rather long bow. This is the sixth or seventh year since I adopted the plan *in toto*, and I continue to recommend it for the following reasons:—In this garden, which is overlooked by part of the living-room windows, I like to see everything shipshape, albeit the rector does say that "constant experiment makes a place look untidy." But raw dung hauled about a space of ground after the Potatoes are taken up, and then followed by the planting out of lanky Broccoli plants, &c., is never pleasant in a small garden in the height of summer, nasal or ocularwise; and under the most favoured circumstances the plants will take a month or six weeks to recover themselves and to look decent. But by the trench rule they can be planted out expeditiously at their proper stage of growth without being kept waiting for the Potatoes to come off, and seldom inclining to club in the trenches; and we had Kale and Broccoli last year when none of their kindred were to be found in the neighbourhood. Again, how seldom do we find the moulding-up of Potatoes done properly, or at the proper nick of time? In the above system that practice is quite superseded, for from the moment they are planted till they are lifted nothing in that way is required; by reason that quite sufficient soil is cast upon them in the first instance, which also insures their non-appearance aboveground till the first or second week in May, when danger from frosts is over, and we may fairly anticipate their ripening to have become accelerated a fortnight at least.

I have read with great interest the communications in The Journal of Horticulture apropos to the earthing-over-head-and-ears system as a preventive of disease, and if I could afford the space I would adopt the plan for a trial. I formerly allowed the haulm of mine to fall down on each side the ridge, but I found that with the later sorts especially, they interfered with and muddled up the occupants of the trenches; so to obviate this I now drive stoutish stakes on each side of the ridges 5 yards or 6 yards apart, and strain a line of tar cord to them to retain the haulm in an upright position, and once or twice I clip off with the garden-shears the overhanging points, should they become too long and dense, so as to exclude the light and air from the Cabbageworts below. The clippings I clear away in a basket, when I take the opportunity to catch and kill the caterpillars from off the Cabbage tribe—a very necessary procedure.

As to the Potato disease, it is sure to come, and the later the better; but sooner or later, and just one week after I have observed the first spot, I take up the crop. Every Potato in this garden was carefully lifted, and under my inspection, by the last week of last July. Their skins were certainly very tender, but they soon toughen when placed not too thickly together. Had I allowed them to remain in the ground a week longer I should inevitably have lost the crop; as it was, all I had to regret in consequence of the earliness of the blight was their size. And to prove that that was not so despicable, and that others need never fear to lift their Potatoes, provided they do so carefully when their skins are far from set, I submit some for your judgment. They are the Lapstone Kidneys (white), and the Haigh's Kidney (mottled red), though I never knew which was which. They were presented to me some years ago by Mr. Cleall, gardener to Sir Trayton Drake, Bart., Lympstone, Devon, amongst other sorts, and I managed to confuse the names.

The white Potato, if it is the "Lapstone," is what I consider the acme of perfection as to what a Potato ought to be, and the mottled red one, if it is the "Haigh," is not so good a cropper, and more likely to take disease; but it is the most satisfying, the richest Potato, so to speak, I ever partook of. Those of the darker hue are the same sorts which were taken up last August twelvemonth. I do not allow my store Potatoes to become deteriorated from "spurting;" they are made to pass through the hands to detach all and every shoot ere it exceeds the eighth of an inch.

But, to revert for a minute to the ridge and trench. When a dry season arrives the tubers have got a larger bulk of soil to grow in. Should a wet season occur, the water drains well away into the trenches, and nearly a double surface of earth is gained for the beneficial influence of atmospheric action, and when the Potatoes are lifted a quantum of soil falls down, and creates a first moulding for the Cabbageworts, which appear a healthy and flourishing crop upon the ground at once. It is astonishing the produce that can be got from a small garden under this system.

The following are the names of the Cabbageworts I grew in the trenches last year. Commend me to them. Cauliflowers in June, followed by Walcheren Broccoli till October, succeeded immediately by Snow's Winter White Broccoli (much sooner than those mentioned by Mr. Fish in his "Doings of the Week"), and coming in successively till the 25th of January, when I cut the last dish. Every plant gave me a head, and such heads some of them were, good gracious! I have had since November, and have now, the Roseberry Brussels Sprouts very fine. I have the Incomparable and the Frogmore Protecting Broccoli very promising to come. Have had all through the summer, autumn, and winter, and have coming in for spring, Mr. Turner's Eclipse Cabbage, which has proved with me a first-rate sort. I have a sweepstakes going on with it and a kind from Jersey. I have had Dwarf-curled Savoys, Galore, and shall have curled Scotch Kale to the end of the chapter. The Ayton Castle Leeks have proved large and excellent for trench-work. I have still a good supply, with Seymour's Red Celery, and the new White Strap-leaf Turnip is a good sort, it has stood with me through the winter, but is now become as warty as a drunkard's nose.—Upwards and Onwards.

[The Potatoes were a full average size and well kept. The Shutford Seedlings were just beginning to sprout. Mitchell's Albion Kidney (the best of the earlies), Haigh's and the Lapstone Kidneys had not at all vegetated, nor had the two-year-old specimens. The Celery and Leeks sent were above an average size, and of first-rate quality.—Eds.]

FRUIT AND FLOWERS IN THE SAME HOUSE.

Although I feel but little right to occupy your better-filled pages, yet with your permission I will give a little sketch of my gardening success as an encouragement to those who, like myself, have few appliances and little skill. I am so deeply indebted to the healthy exercise and interesting employment of horticulture—I feel so convinced of its benefit both to mind and body, that with so favourable an opportunity of advertising my favourite panacea for diseases of both, I should consider myself culpable in not profiting by it. More especially would I endeavour to encourage amateur gardeners who are thrown chiefly on their own resources; for such, I feel, have a keener relish for the art than any other person, since the pursuit is their own choice, and they have many difficulties to contend with that nothing but real love for it could surmount. To such, then, I particularly address myself, premising that I have no regular gardener, and that I take the whole superintendence of my pot-plants on myself.

In 1837, principally to be enabled to add a little decoration to a local cottage garden society in which I was interested, I built a small greenhouse, 18 feet by 12 feet; it is a lean-to, facing the south, lofty, airy, very well built, and heated by flues. The inside is fitted up on a plan of my own, calculated to display the flowers in their several seasons, as my aim is to get a succession of well-accredited species rather than a greater variety, and never to attempt growing such as are not suited to the temperature of the house.

At the expense of a few pounds, and a *carte blanche* on two or three friends' houses, I soon had a gay stand which, with perhaps an annual interregnum of a few weeks, has continued so ever since, allowing a little overplus for my drawing-room windows.

Thus much for the Ornamental. I now come to the Fruitful. I bought a Muscadine and Black Prince Vine, a Sweetwater from my own walls (where in fine summers they produce excellent Grapes), and a Black Hamburgh, a far-off descendant of the famed Hampton Court Vine, from a neighbour. Here I had the good offices of my occasional gardener, who works two days a-week for me. He cut back the Vines for three years, and then only allowed a few bunches; but last year we had a superb show—at least 50 lbs. of well-ripened Grapes, of fair-sized bunches, large berries and high flavour. They appeared at many of my friends' desserts, and on one occasion without, I am told, losing by the comparison, side by side with some for which 4*s*. a-pound had been given, from the vinery of a noble proprietor.

Have I said enough to prove my position, that good fruit and fine flowers may, by a little management, be made to ripen and bloom together in the same house, and that a small one?

My statement is a very plain one; but I hope the results it announces will induce others to try the experiment, who will soon out-strip me in the race, and will, I trust, give your readers the benefit of their success.—A. Z.

STATICE HOLFORDI—MONOCHÆTUM ENSIFERUM DAMPING OFF.

RHIPSALIS SALICORNOIDES CULTURE.

I have under my care some plants of Statice Holfordi which were struck and grown in the stove early last spring; when showing for bloom they were removed to a cool house, and when in bloom were taken to the conservatory, with the exception of one, which soon showed symptoms of bad health, the bloom-stalks dying off before the flowers were expanded; and on examining it I found there was a kind of humouric matter in the heart of the shoots, which, in time, rotted them, and the plant has kept breaking afresh and dying in the same way till it has nearly lost its foliage. The others flowered well; but since they have been back in the stove one has become nearly as bad: meanwhile, an old plant that has had the same treatment is in good health.

Also two plants of Monochætum ensiferum, which have had greenhouse treatment during the summer, but have kept dying back till one has died outright, and the other has died to a stump, and I cannot account for it as I have watered them carefully, &c.—J. W.

[We cannot be sure what is the matter with the Statices, except changing the temperature too suddenly, and using compost rather heavy. Try what the least thing of salt in the water would do—say one-quarter of an ounce to the gallon.

The Monochætum should not often be below 45° in winter. Sandy fibry loam, and a little heath mould will grow it well. We cannot account for your plant dying back, as, unless in winter, it seems as easily grown as a Fuchsia.

The plant you enclosed is Rhipsalis salicornoides, requiring to be grown in sandy heath soil, with a little loam, and to be kept in a temperature of from 50° to 60° in winter, and from 70° to 85° in summer.]

SEAWEED AS A MANURE.

Having lived for years on the southern coast, I am, of course, aware that seaweed is extensively employed as a fertiliser by professional and other tillers of the ground. This much I know, but more than this I wish to know. I desire to be told by some enlightened horticulturist, how, when, and for what it could be used. Ought it to be applied to the land in the crude condition in which it is carted from the beach? or should it be gathered into a heap and suffered so to remain until decay has wrought a conversion? Is it suitable manure for culinary crops generally? I am told that when put together in a heap the process of decomposition is a tardy one. Of this fact I have some evidence in a fisherman's seaweed-hut some half mile hence. If mixed with the refuse of terrestrial vegetation, would decay ensue more quickly? Prejudice has hitherto hindered me from proving these things by experiment.—R. Mullen.

[General experience has long since proved that seaweed cannot be dug or ploughed into the land too fresh, and if immediately before sowing or planting the crop all the better. It is quite true that in the Isle of Thanet they mix the seaweed with earth or sand in alternate layers, and let it decompose before using it as a manure; but the general experience in other parts of England, Scotland, Ireland, and the Channel Islands, is in favour of using the seaweed in its fresh state. There is no kitchen-garden crop for which it may not be used advantageously. For Beet, Parsnips, and Carrots, at the time of trenching the seaweed should be dug in with the lowest spit. Seaweed is an excellent covering for Asparagus and Sea-kale-beds in autumn, and is an excellent mulch for all freshly-planted trees.]

GOURDS AND THEIR CULTURE.

The Royal Horticultural Society having offered prizes for this class of fruits, a few notes on their culture and general features may be of service to the inexperienced cultivator at a time when this hitherto-neglected family seems likely to be brought into public notice, and the individual members of it subjected to a rigid scrutiny, with becoming honours paid to those to whom honour is supposed to be due. It will be as well to call to memory the varieties which from time to time have been popular amongst us, with the mode of culture, and other particulars relating thereto.

The extensive families of Gourds, Pumpkins, and Vegetable Marrow seem so much united by intervening links of connection that it is no easy matter to define them; and the class of Snake Cucumbers is also allied to this family. Some years ago one of the Cucumber Gourds was exhibited at one of the London shows, upwards of 6 feet long, and I believe this has been much exceeded. But the largest and finest specimens, doubtless, have the advantage of glass, which is certainly not advisable in a general way; and as a varied and interesting group can be obtained without further aid from glass than rearing the young plants in it for a short time in the spring, only such kinds will be here treated of as will bear planting out of doors at the end of May; and for that purpose they need not be sown until about the end of March or first week in April, if there be a hotbed, pricking the plants out in pairs into six-inch pots, and after being grown awhile in the same hotbed, they may be gradually hardened off, so that at the time I speak of they may be finally planted out of doors. Plants a little pot-bound are no worse, provided they are healthy; but do not allow them to root through the bottoms of the pots into the bed or place they are standing on, which they are very apt to do, and consequently to suffer when removed to their permanent quarters. Keep a watchful eye on green fly and other enemies, and if any appear let the plants be fumigated with tobacco before planting out, as it is difficult to do afterwards.

Situation.—It is rarely this class of plants is much favoured that way; but an open sunny place is necessary. Planted on the top of a bank they will speedily cover it; and sometimes they are planted to cover old roots, the face of rockwork, or to scramble over a rubbish-heap, or amongst dry dead sticks, against pallisading, occasionally against walls, and over roofs of all kinds, and sometimes to cover verandahs, arches, grottos, and other descriptions of fancy work, all of which the hardy kinds are adapted to do in favourable seasons, and they accomplish it all with less trouble than most plants require; for, excepting the fastening to pallisading, walls, arches, &c., the other positions require little or no attention whatever. Some of the delicate kinds may, however, require a snug corner against a wall, and some training and stopping will enable the plant to bear and perfect its fruit.

Soil.—The ordinary garden soil will do. Certainly they do not require a rich loamy soil. A light stony one, not by any means shallow, suits them best; for if the roots be denied the sustenance they want, mildew attacks the plant at once, and its

ness is soon over. On the other hand, a too generous soil
es rankness of growth, which is inimical to bearing fruit in
uantity. Ordinary well-cultivated garden soil generally,
rer, answers very well; and, as I have before observed, the
sh-heap, consisting of stones and other garden refuse, is a
l place to grow them on, if it be a sunny one. Last year I had
al rustic arches made to cross a central walk in the kitchen
n, and Gourds were planted against them, and in general
did very well. The growth after the 1st of August was
rapid than before, July being a dull month here. Their
re is, therefore, an easy matter, merely tying them up to
upports, and occasionally cutting out shoots not wanted.

ieties.—As regards the eatable kinds, there is much difference
nion. Mr. Cuthill introduced a variety, some years ago, re-
d to possess good properties this way, but it quickly fell into
oute, and from time to time we have had what were said to
provements on the old Vegetable Marrow. Three or four
ago the Custard Marrow was in great repute, but it lost
friends last year, and I believe the old Vegetable Marrow
ll the premier in its class; but there may be other varie-
aving local reputation, which the forthcoming Show will,
less, bring out. Varieties of extraordinary size are plenti-
nough—at least, seed lists report them to be so. As I con-
I have only grown one variety of this class, and it was
ate to attain maturity; but well-recommended varieties
in a general way be depended on. This class requires a
deal of room, so that few growers can find space for many
. Varieties for appearance are, perhaps, the most nume-
of all, and may be subdivided into several sections, which I
s done in the admirable collection mentioned in Messrs.
& Sugden's catalogue; there is no difficulty, therefore, in
ring a collection. There is great diversity in the habit
haracter of this fruit: the miniature Gourds are not larger
a hen's egg, while the mammoth varieties are sometimes
a considerably over 100 lbs. in weight, and instances have
known of their being nearly double that weight. The most
iful, however, that I have seen are the intermediate sizes,
thing about the stamp of an ordinary Melon; while the
e Gourd, Hercules' Club, Snake Gourd, and others are all in-
ing, and all manner of stripes and streaks. One of the most
nental kinds grown here last year was a Pear-shaped one,
hick or lower end being green, while the other end was a
yellow, and there was a clearly-defined line where the two
rs met—not the least running of colour could be discerned.
old Orange-striped Gourd has been greatly multiplied, and
-and-white-striped varieties of several kinds abound. One
e prettiest of this class I saw last year at Belton, the seat
arl Brownlow, in Lincolnshire, and I believe the same was
r John Thorrold's, in the same county. But as many
varieties are, doubtless, only now waiting to be distri-
, the autumn of 1862 will exhibit a great increase in col-
ns of this kind; and if the exhibition serves no other
ose, it will at least enable us to weed out the useless and
erent from those of an opposite description. But I do not
y means advise the amateur to try to grow too many of
; the space they occupy cannot always be spared in grounds
nited extent, and unless they have room they are worse
useless. A sunny aspect is also requisite; but the more
are sheltered from winds the better, as in very exposed
s it is useless to expect them against pillars and similar windy
s, but on the ground they may do better.—J. Robson.

COLUMBINES.

E Columbine (Aquilegia) a few years since was more
non in our gardens than we see it at present, yet it is now
utiful ornament of our cottage homes, where some of the
varieties may still be found. I well remember an old-
oned garden where a few of the best varieties were culti-
and cared for as we rarely see them now; but I am grieved
rn that the stock is destroyed, and the ground used for
ing upon.

e beautiful Aquilegia glandulosa is becoming very rare in
gardens. I must confess that I never could grow it to
ction, and am informed that the gardener who can grow it
rfection in England is a rare sight to see. I have grown
s from seed, and had plants sent from Forres, N.B.—where
ws like a weed in some gardens, and in others it flourishes
rt time, and then gradually dies away—yet with all my care and attention I never could get a plant to grow and flower well.

One of the market-women, who attend the market at Sheffield to sell hardy plants, used to offer for sale during the flowering season well-grown plants of A. glandulosa. Knowing that such well-grown healthy plants as she offered for sale were rarely seen, I inquired the means by which such results were obtained. Her reply was, "Nothing is more easy. We grow them in common garden soil, mixed with sandy peat from a neighbouring common, and we have no further trouble with them; and I can assure you that the money which we obtain by the sale of the plants will nearly pay the rent of our garden." Has any reader of The Journal of Horticulture tried this plan; and if so, what has been the result?—Rustic Robin.]

NEW AND RARE PLANTS.

CLERODENDRON CALAMITOSUM (*Hurtful Clerodendron*).

Nat. ord., Verbenaceæ. *Linn.*, Didynamia Angiospermia.—Native of Java. Its white flowers are very unobtrusive compared with those of some other species cultivated in our stoves. —(*Botanical Magazine*, *t.* 5294.)

ARISTOLOCHIA ARBOREA (*Tree Aristolochia*).

Nat. ord., Aristolochieæ. *Linn.*, Gynandria Hexandria.—Native of New Granada. Each of its very peculiar tubular brown flowers is closed by a velvety disk. They issue from the stem near the ground. The stem is about 7 feet high.—(*Ibid.*, *t.* 5295.)

MAXILLARIA VENUSTA (*Graceful Maxillaria*).

Nat. ord., Orchideæ. *Linn.*, Gynandria Monandria. Probably identical with *M. anatomorum*.—Native of Ocana, in New Granada, at an elevation of 5—6000 feet above the sea. Flowers white, with two round crimson spots on the lip. Blooms in October.—(*Ibid.*, *t.* 5296.)

CROCUS OCHROLEUCUS (*Cream-coloured Crocus*).

Nat. ord., Irideæ. *Linn.*, Triandria Trigynia.—Found by M. Gaillardot in a clayey soil near Scanderoun on Mount Libanus. It is found blooming there from October to December. Flowers creamy white, with a yellow eye.—*Ibid.*, *t.* 5297.)

IRIS LONGIPETALA (*Long-petaled Iris*).

Nat. ord., Irideæ. *Linn.*, Triandria Trigynia.—Native of California. "It seems quite hardy, and will prove a great ornament to our flower garden." Flowers purple, and white striped with purple.—(*Ibid.*, *t.* 5298.)

LEEA COCCINEA (*Scarlet-flowered Leea*).

Nat. ord., Ampelideæ. *Linn.*, Monadelphia Pentandria.—It has also been called L. lucida. Most erroneously, in gardens it has been named Panax excelsa and Aralia excelsa. Believed to be a native of Java. "Deserves a place in our stoves on account of its graceful habit, and its thickly-flowered cymes of scarlet flowers." Plants begin to bear flowers when less than a foot high.—(*Ibid.*, *t.* 5299.)

THE GARDENS OF DAMASCUS.

Beaufort's "Eastern Shrines" gives the following interesting description of the environs of Damascus:—

"A new ride can be taken every day for four months among the charming groves, fields, and orchards, with pleasant-looking villages here and there, about the city of Damascus. A network of little canals and channels of water extends over the cultivated plain, cooling the air, and soothing the ear with the pleasant murmuring of the streamlets to which all the glorious verdure is owing. Miles and miles of these tiny rivers are spread over the ground, every one coming originally from Barrada—the Abana of Scripture, which Naaman considered with natural pride as fine a river as any in Israel. The Pharpar, or, as it is now called, the Awag, is not so long as the Barrada, contains scarcely a third as much water. It rises on Mount Hermon, and both rivers after passing Damascus are lost in the marshes on the sandy desert beyond. There are many varieties of trees in the gardens of Damascus; but the most numerous are the Apricots, the dried fruit of which forms so very large a part of its commerce. The Apricots are either dried in the sun, and then pressed in slight wooden boxes, or else they are stoned and mashed into a thick paste, which is dried in masses a yard or two long, and is exported in large rolls, looking like brown leather. It is said to be a lovely sight to look over the plains in Damascus in the spring, when the innumerable Apricots are in flower —the effect being of light snow resting on the trees; but many persons think it more striking when the fruit is just ripe—then the trees glow as if illuminated with thousands of tiny lamps hung among the branches. One of the pleasantest afternoon rides was to the village of Jobah, at about an hour's distance from the city, where it lies hidden among Walnut-groves. This place has been, time out of mind, held sacred by both the Jew and the Moslem; and there is a very ancient synagogue built over the cave in which it is believed that Elijah hid himself from the persecutors of Jezebel. In the centre of the synagogue there is a space railed off, where Elijah is said to have anointed Hazael king."

SOWING CATTLE CABBAGES.

I PURPOSE practising Mr. W. Johnson's plan of sowing the seeds of the Drumhead, and other Cabbages, but would have been glad to have been told at the same time the proper time for sowing the former sort, so as to have a good winter supply. The writer has years ago pursued this plan with his garden Turnips, and particularly with Asparagus, which he has found produce excellent beds much quicker and finer than by plants. He has found two-row beds the finest and easiest managed. The writer has years ago had very large heads of the Drumhead Cabbage in winter in another county, but has quite forgotten when he sowed the seed. Soil sandy loam, north aspect.—A PEDDLING GARDENER, *Norfolk.*

FLORISTS' FLOWERS,

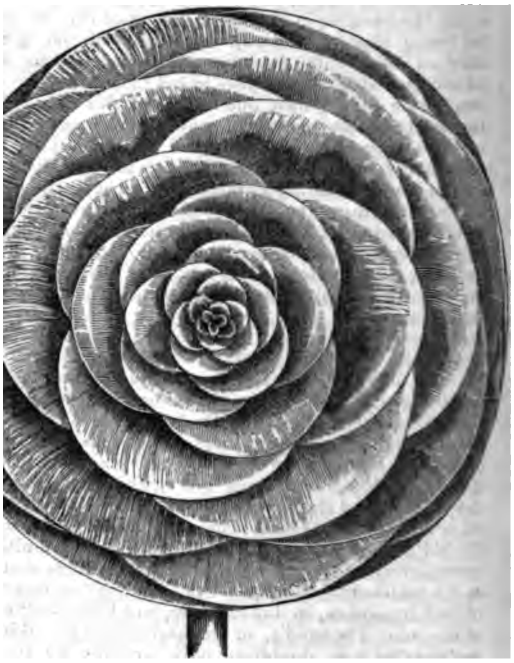
THEIR DISTINGUISHING CHARACTERISTICS, CULTIVATION, AND VARIETIES.—No. 2.

THE CAMELLIA.

THERE is not, probably, within the wide range of Flora's dominions so universal a favourite as a double white Camellia. It lacks, indeed, perfume; but who ever met any of the gentler sex, the truest and best lovers of flowers, who did not exclaim, when looking on the snowy petals of one of this lovely tribe, "How beautiful!" And what lovesick Corydon has not felt that there is not one he could be so sure of being acceptable to his Phyllis as one of its half-expanded buds, or even a full-blown flower? But to every loyal subject it has now a deeper and more solemn interest, for it formed the centre of the bouquet which our Royal Mistress sent, as her last touching tribute of real love, to be laid on the coffin that contained all that was mortal of One who had been to her more than all the world beside. There are many who will never look on a white Camellia again without recalling the memories of an affection which is indeed rare in king's palaces, and which God honours wherever it exists.

We hardly can wonder at this admiration. The snowy whiteness and thick solid character of the petals, combined with the rich glossy foliage, form a picture of great beauty; while the glowing colours of the rose and crimson varieties are nearly equally attractive—and their cultivation is really so easy that there can be no reason why they should not be universally grown. There is but one period of their growth wherein they present any difficulty, and that I shall notice by-and-by; although I feel somewhat of a perplexity in writing about them, as so much has been said, and said so well, by Mr. Anderson in some late Numbers of THE JOURNAL OF HORTICULTURE.

Notwithstanding the exceeding beauty of the Camellia in general, there are some kinds which are considered to surpass their congeners in the matter of form; for it now has been brought within the range of florists' flowers, and subjected to the arbitrary rules which govern that portion of Flora's realm. The model idea of a perfect flower is here given to the reader, and it will be seen from it that the petals ought to be round, smooth on the edges, and gradually decreasing in size from the large outer guard petals to those which form the centre or crown of the flower; viewed at from the side, it ought to rise [illegible] semicircular form. The evenness with which this laying of petal over petal is present in some varieties has led to their being called "imbricated." Probably as perfect examples as we have are Montaroni (white), and Master Rosea (rose). The latter are almost if not altogether unknown varieties in England, but to which I have referred in a notice lately given on Monsieur Cachet's nursery at Angers. As to habit, it is extremely desirable to avoid all that loose straggling method of growing to which some kinds seem unfortunately wedded; but avoid by all means that old fallacy that the knife is death to a Camellia. On the contrary, as Mr. Anderson has well observed (and indeed his papers almost preclude my saying anything on the point of cultivation), in your Journal, p. 393, there is no plant that so well stands pruning as the stronger varieties of the tribe. I believe the idea arose mainly from the dislike to cut off a dainty-looking bud and its attendant leaves; but in gardening, utility must give way to sentiment, and a plant of Camellia may be as easily trimmed as any of the order to which it belongs.



The very extended and minute directions given by the writer above named are perhaps intended rather for extensive growers; while mine are more adapted for those who, with their small greenhouse such as is described in the Journal of February 11th, wish to have a few of these universal favourites, and perhaps to bring them into the sitting-room to bloom. With such propagation has no place, and indeed is, I believe, rarely practised except by those who grow for sale. The process of grafting is tedious and requires heat, and, when plants can be purchased for a couple of shillings, does not pay. There is no soil preferable for growing them in to one of peat and loam, with some pieces of charcoal broken up in it; and if due care and attention be given to them, I question whether shifting every year is desirable. I, too, know plants which seem to me never to get one. There they are in the window of a neighbour, with leaves looking as glossy and bright as possible—I have no doubt carefully cleaned at times, and amply repaying the care by their vigour and beauty.

I should say that with regard to the best period for potting there is some difference of opinion amongst gardeners; some doing it immediately after blooming, others waiting until the growth is made.

When the plants have done blooming and their fresh growth commences, is the time that those who grow only a few and have no warm house are apt to fail most. At that period the plant likes heat and a damp and close atmosphere. Where this is not procurable the next best plan is to put them into a frame, shading the portion where the plants are, and syringing frequently; but as this must be done when all fear of frost is over, it will of necessity make the plants to come into bloom later. After they have completed their growth they should be first hardened-off, and then stood out of doors in the shade. Here oftentimes they receive much injury from the intrusion of worms into the pots, and should therefore be placed on tiles or slates to prevent this. Should the weather be dry, of necessity they will require water; for if they be stinted, although they will not, as amongst softwooded plants, hang their heads and weep, and so the mischief is not perceived, they will nevertheless, when the buds are forming, show the effect by casting them off; and thus when they are brought into a room to bloom they require great care, the dryness of the atmosphere telling upon both the roots and the foliage. I this year found two of mine steadily refusing to open their buds. They formed well, became of good size, but there remained. On examining the pots, I found that this had arisen from the fact of my having said they ought not to be kept dry, and as a consequence they had been saturated with water.

There must, I think, be gross neglect whenever the Camellia becomes troubled with scale, which is its worst enemy; and now a good dose of Gishurst, washing it off with clean water, enables an amateur effectually to get rid of it. If they stand, as in small concerns they must do, amongst other plants, they will receive a due share of fumigation, and this will be sufficient to keep down the attacks of either green or black fly. These directions may seem very meagre and commonplace, and so, perhaps, they are; but the articles of Mr. Anderson may be most profitably consulted by those who desire fuller instructions and a more scientific treatment of the whole subject. A different class of readers has been before my mind, and I hope for them they may be sufficient. The varieties of the Camellia are numerous, comprising white, pink, crimson, striped, &c.; and I give here the names of a few from which a selection may be profitably made.

Alba plena (the old Double White).
Fimbriata alba, beautiful white; the edges fringed.
Montaroni, white, globular in form. Very good and large.
Ochroleuca, creamy white. Distinct.
Imbricata, satin-like rose. Very fine and good.
Princesse Bacchiochi, crimson. Good.
Master Rosea, veined rose. Very large and good form.
Marchioness of Exeter, cherry rose.
Saccoi Vera, fine rose.
Countess of Derby, striped. New.
Etoile Polaire, striped. A new flower of the present season.

As I perceive Mr. Anderson is going to descant upon sorts, and as we shall probably see something of the best next month at Kensington, I hope then to add a few more remarks on this point.—D., *Deal*.

ICE-PRESERVING.

There has been a good deal of pleasant skirmishing already pro and con. on this question, and were it not that I know of a case in point which very much bears out my conclusions, I would scarcely place them in the dignified position of becoming part of horticultural history.

One of the best ice-houses I have ever seen, and one, too, of the most simple pretensions, is a large open shed lying to or against the sunless side of a north wall. Its roof is thatched with straw, after the manner of the old tenements (for there are a few to be seen in one's peregrinations now-a-days), of the poorer classes in Scotland, and supported in front with good stout larch pillars some 10 feet or 12 feet apart. Measuring by the eye, I should suppose it was 7 feet high in front, and 13 feet at back. It is of considerable length, holding upwards of four hundred cartloads, and lies at a gradient of 1 in 20 feet. It is hollowed out or concave at bottom, with a drain running down its centre, so that melted ice can run at the gallop, and the huge iceberg subside on the spruce branches which intervene between its body and mother earth.

Cartload after cartload is emptied with the least manual labour possible, only the constant hammering with the mallets and throwing-up to get the shed thoroughly well filled. A layer of 2 feet of straw is the only barricading medium in front and both ends; and yet this is a never-failing source of supply, especially during the months of August and September, when, I am told by the best authority, there is a cartload every day taken from it. This sounds something like efficiency; and what can you tell me of more economical? But observe, that is not all. There is also a sunk oval brick ice-house in the same establishment, which spends itself annually away, scarcely a vestige to be found there—at a time, too, when most wanted.

Now, I agree with Mr. Beaton that damp is very destructive to ice-preservation, and that if hygrometrical observations were to be taken with a successful and an unsuccessful ice-house, it would abundantly and conclusively test the hypothesis; but I follow with reservation his leading on air-currents in its most literal sense. A current of air, as we read it, has something the same effect on your sense as a breezy day, which I believe also to be fatal to ice-keeping.

On the contrary, if the air is modified on all sides, as in the instance above, or Mr. Beaton's ventilators regulated in such a way as not to admit rushing air, then it will have the opposite tendency of constantly relieving the accumulated moisture without aggravating the liquefaction of the mass.—J. Anderson, *Meadow Bank, Uddingstone*.

PEARS IN SCOTLAND.

I was very pleased to learn from The Journal of Horticulture that my late master, Mr. Anderson, gardener to the Earl of Stair, Oxenford Castle, N.B., had gained the championship for the best collection of Pears at the Royal Horticultural Society's winter show, which collection contained no less than twenty-two distinct dishes, and pronounced by Mr. Beaton to be all correctly named.

When the very unfavourable circumstances are considered under which Mr. Anderson has laboured to bring that choice fruit to the perfection he has—namely, a wet and, comparatively to that of England, a sunless climate it is a proof that Mr. Anderson is possessed of no small amount of practical knowledge of his profession: consequently, on these grounds I will endeavour to give you a brief outline of Mr. Anderson's treatment of wall-fruit trees during the two years I lived there; and, if you think it worthy of a place in your Journal, it is at your disposal.

When Mr. Anderson entered on his duties as superintendent of Oxenford Castle gardens, he found a good many of the wall trees were getting old and worn out; while others were degenerating into a barren unfruitful state, from their roots penetrating into the cold clay subsoil.

To overcome these evils without any addition to his regular staff was necessarily a work of time and perseverance: consequently, the work was performed piece by piece in the following manner:—

Those trees that were next to worn out found their way by degrees to the faggot pile, and those that were degenerating into an unfruitful state had the following treatment:—

A trench was dug along the side of the border farthest from the wall, three and five-pronged forks were then used to unloosen the soil away from the roots, and as it tumbled down into the trench it was thrown out with spades or shovels.

During the operation of moving the soil, the surface or most fibrous roots were carefully tied together and moved to one side and the other, out of the way; and what are called carroty roots, or those which had descended into the cold clay subsoil, were cut clean away.

When the soil had been all turned out in the above manner, a few inches of broken stones were put in the bottom of the border, over which was placed about 3 inches of concrete, which was firmly and smoothly beaten with the back of the spade. As soon as the concrete had become sufficiently hardened to allow treading upon it without injury, a few inches of broken stones, or stonemason's rubbish, were spread over it, and then covered with some rough litter, when the soil was again moved back into the border, at the same time well mixing it with a little dung-manure.

When nearly three parts of the soil, which is of a heavy loamy nature, had been got back into the houses, the roots were laid carefully and evenly out; they were then carefully covered with the soil, spreading it the way the roots lay until they were all covered, which prevented them then getting displaced, broken, or otherwise injured, which they would have been very liable to be had the soil been tossed on in a careless manner.

When the trees were thus planted they were merely slung to the wall for some time, which prevented the wind from blowing them about, and it also enabled them to subside with the soil.

Where it was necessary to plant young trees, the border was prepared in the same manner described for the trees that were retained; but their roots were laid carefully out not more than between 3 inches or 4 inches under the surface. They were then covered as far as the roots extended with rough litter, which prevented them getting injured by frost; and it also assisted the tender rootlets to push away into the fresh soil.

These trees were frequently gone over during the course of the season to rub off all misplaced shoots, and to lay the foundation for healthful and well-formed trees.

The fruit-bearing trees were also occasionally gone over during the summer to remove all useless shoots, and to pinch back others to the third or fourth leaf according to the vigour of the tree, which length prevented the embryo fruit-buds from making wood, instead of maturing themselves for fruit-bearing the following season; and which also enabled both fruit and wood to enjoy the full benefit of the sunlight to bring them to a proper state of maturity; for the value of this every Scotchman knows, as he is very often as much accustomed to Scotch mists as he is to sunlight.

Every good gardener knows that there is no real benefit to be derived from allowing a fruit tree to mature too many fruit in one season, the Pear, of course, included: therefore where they were hanging too many in a cluster—say five or six—Mr. Anderson thinned them out to three or four, and thinned, if possible, so that they would not touch each other when full grown, in order to expose as much of the fruit's surface to the sun as possible, thereby getting large, well-formed, well-coloured fruit, qualities which they would not likely attain were they allowed to remain to dig into the ribs of one another.

But there can be no authentic rule laid down for the thinning of fruit. Were all fruit trees in one uniform state of health, and all placed in a like favourable position to bring their fruit to maturity, the thinning of fruit would be a very simple matter; but, as they differ in many instances as widely as east from west, any directions for fruit-thinning may serve as a guide, but not as the rule.

The wall trees at Oxenford had a good watering once or twice during the summer with liquid manure, or soapsuds, an operation which was greatly facilitated by Mr. Anderson having pipes made of strong canvass cloth. These pipes were made by the garden women. When they had two or three coatings of white-lead paint to make them waterproof, and could be joined together to any length by means of brass joints, one end of these pipes was fixed to the pump which was used to force the water out of the pit in which the water was collected, and by it the water was forced through the pipes to any part of the garden—a piece of ingenuity which greatly facilitated the watering of the many fruit trees which Oxenford Castle garden contains, and it abolished any traffic along the walks with water-barrels, which cannot be dragged along well-kept walks without giving them an unsightly appearance, at least until they have been again rolled.

Having given you a brief and perhaps rather imperfect outline of Mr. Anderson's management of wall trees, I will, with your permission, also give you a brief outline of his treatment of the Vine; in justification of which, I must say that I have not seen better or more profitable crops of Grapes, not even at Trentham or Keele Hall, all the borders of the latter had been renewed by Mr. Anderson. Two borders remained to be done when I went there, and were done in the following manner before I left; but I will first add that the Vines in these had the appearance of having done well at one time, and they no doubt bore excellent crops of Grapes. But the fruit that were on them then, which ought to have been black or blue, were as brown as foxes,—scarcely one of them had escaped shanking. So to root out the evil, Mr. Anderson commenced at the root.

A trench was dug in front of the border in the same manner as described for the Pear-wall. The soil was moved to various parts of the garden, where an additional depth of soil would prove beneficial, or where the old soil would be improved by some fresh being added to it.

The border in question was about 4 feet in depth, and the soil of which it was composed had the appearance of being a good substitute for putty; the roots were few and far between, and those that there were had not a very promising appearance. I [illegible]lieve Mr. Anderson se[illegible] a piece of them [illegible] the inspection of [illegible] [illegible] accompanie[illegible] [illegible] descripti[illegible] [illegible] the texture [illegible] the soil, to which the Doctor made not a very complimentary reply; but I must say that the Doctor made a snap on the wrong person that time, for any information which Mr. Anderson gave him with regard to the soil was from his having lived there at one time as under-gardener.

When the soil had been all got out, about 18 inches of stone rubbish was placed in the bottom of the border, the smallest on the top; 3 inches of concrete were then spread over that, and, when dry, straight lines of drain-tiles were laid from the inside border down to the drain in front of the outside border. These straight lines of drain-tiles were about 10 feet apart. Stones or brick rubbish was then spread over the concrete to the depth of the tiles, thereby securing an impenetrable and perfectly dry bottom for the roots of the Vines.

Whole turves, two deep, were laid along the bottom of the border, then some of the following compost:—Rich turfy loam, charred vegetable refuse, lime rubbish, and a little well-decomposed dung; these were well mixed together by frequent turnings previous to their being used. The roots were then laid carefully out, and covered over with the above compost, and the border when completed was a foot above the level of the surrounding surface. I will just add that nothing could give more satisfaction than these Vines did.—G. U. R. J.

GISHURST COMPOUND.

I AM anxious to say a word or two of warning respecting the use of Gishurst Compound. In November last I dressed some Peach trees in the early-house with it, at the rate of 8 ozs. to the gallon, having read in your Journal of some people using it at the rate of 1 lb. to the gallon; but I thought I would be safe by using half that quantity.

I started the house the 1st of December, and by the 1st of January they should have been in bloom; but those trees that were dressed with the Compound lost almost every flower-bud, while it did not hurt the wood-buds. The other part of the house was dressed with a mixture of soft soap, tobacco water, and sulphur. The trees dressed with the latter are beautifully set with fruit and are swelling fast now.

Now, for another instance. I had some Strawberries in a vinery with fruit almost ripe, so that I could not smoke them; so I made a mixture of the Compound, at the rate of 2 ozs. to the gallon, and syringed them with it once. I must say, before I go any further, that the Strawberries had thrown up their flower-stems. The next morning the flower-buds were blackened, and all flowers destroyed; that was a week ago. I have only thrown them away to-day (February 20th).—J. E. F.

LORD PALMERSTON'S ESTATE IN SLIGO.

No estate has had a heavier or more successful expenditure bestowed upon it than this. About £25,000 have been laid out in forming a safe harbour for the fishing-boats and other craft, and the seashore village has a good prospect of becoming a frequented watering-place. Our purpose, however, is to point out the planting which has been effected on the sandy sea margin, and for the following notice of it we are indebted to *Saunders' News Letter*:—

"One of the most interesting features of Cliffoney is the Pine plantation, by which the blowing sand-hills have been consolidated, and from being a source of considerable injury to the adjoining land, have been rendered both ornamental and useful. Some fifteen or sixteen years ago, the seashore was bounded by a range of sand-hills which were constantly shifting, and frequently during the prevalence of high winds the sand was scattered far and wide over the fields. Lord Palmerston resolved to try the plan, so successfully adopted in France, of fixing moving sand-hills by the planting of Bent-grass and the Pinus maritima—a description of Fir tree which has been found to thrive well even when exposed to the fierce blasts of the Atlantic. The experiment has been attended with complete success. One thousand acres of sand-hills are now covered with a flourishing plantation of Pines, some of which have attained the height of 20 feet. The process of planting is at present going on vigorously, under the superintendence of his lordship's skilful agriculturist and steward, Mr. John Hannon. The course adopted is this: On the blowing sand-hills Bent is first planted, and after a year [illegible] [illegible] the sand [illegible]comes tolerabl[illegible] well fixed. The seed is the nd all that remains to be done is to protect, as far as e, the young Pines, which will soon make their appearance the ground. Hares, rabbits, crows, and snails, are great s to seedling Pines, but after the first year they are not ed with. The Pinus maritima has been found to thrive ot only on the sand-hills near the seashore, but on bog or nds that have been tolerably well drained, and in various throughout Lord Palmerston's estate they have been l extensively. There is a large nursery near Cliffoney ocked with Larch, Spruce, Scotch Fir, Elm, Holly, Quicks, &c."

WORK FOR THE WEEK.

KITCHEN GARDEN.

he present fine weather continue, considerable progress made in getting in some of the principal crops in light dry but on stiff wet ground it should by no means be ted. *Artichokes*, if the weather continue mild, give them pring dressing. *Basil* and *Marjoram*, to be sown in pans , and placed in heat. *Broad Beans*, earth up the early-rops; if any were sown in boxes, place them where they ve an abundance of air night and day to harden them off nting out. *Cabbage*, the autumn plantation should now d up, fresh ones may also be made. Sow more seed to e plants for summer and autumn use; also seed of the pickling. *Cauliflower*, if seed was sown early on a hot-h Carrots or Radishes, they should now be pricked out ight hotbed, or in a cold frame where they can be pro-in severe weather. *Lettuce*, fill up any vacancies that cur in the autumn plantation. Sow some seed of the a warm border. *Mushrooms*, beds out of doors to be otected from wet; damp litter to be removed, and its upplied with dry. *Onions*, autumn-sown ones may be l out in favourable situations; the general spring sowing so be made towards the end of the week in light and dry *Peas*, harden off those sown in pots and boxes previous ting out in the open ground, place them in a cold frame, the lights remain off night and day in mild weather. up the early crops when the soil is somewhat dry. *es*, make another sowing to succeed those sown the begin- the month. *Rhubarb*, may be forwarded in the open by placing a hand-glass, or Sea-kale pot over the roots. sow seed for the first crop. Replant old Box-edgings, ep them clipped neat and close; repair all other edgings s, and take the advantage now the gravel walks are soft and roll them down firmly. Much more can now be a day, and in a better manner than when hardened by g winds and hot sun, and they will be more easily kept order afterwards.

FLOWER GARDEN.

n edgings are required to flower-borders, they should be as soon as possible. Box, Daisy, Thrift, Camomile , Aubrietia purpurea, Campanula pumila, and Pansies used for that purpose. Plant out Carnations, Picotees, with biennials in general, and let all perennials be re-without delay. Look to the sowing of annuals. Finish ng of turf and all alterations as soon as possible. Finish climbers and deciduous plants. The lawn should now rolled, the benefit of so doing will be seen throughout ole summer.

FRUIT GARDEN.

ll suppose the pruning, tying, and training of espaliers other fruit trees to be brought to a conclusion, except, , in the case of a few Peaches and Nectarines; the ground anured as far as was intended, and forked-up; and the at were infested with moss and lichen dressed as before re-ded. It will now be a source of great interest to observe ost daily progress of the buds, which, considering all , have rarely been seen in finer condition for the prospect uitful season. Every advantage must be taken of dry lays to stir and hoe the surface in these departments, and look-out must be kept to protect the buds of wall trees e getting in a forward state. Look to the Fig trees, nd train those that require it, tying or bending the strong lown, which will induce them to push out a number of inted bearing shoots. Let all the old leaves be cut ray from Strawberry-beds, extirpating all the remaining

STOVE.

Any of the Euphorbias, Gesneras, Eranthemums, Geissomerias, Justicias, Poinsettias, or other such plants that are going out of bloom to be cut back and removed to a lower temperature for slow breaking, repotting them in a few weeks, and plunging them in bottom heat to produce blooming specimens in November and December. Begonias and other free-growing plants to be propagated for autumn blooming.

GREENHOUSE AND CONSERVATORY.

A general dressing of the climbers should take place immediately. When it is desirable that they should bloom late in the autumn it will be advisable to prune late, even after the buds have commenced growing, on the same principle that the Moss and other Roses are successfully retarded by such a course. Pot Pelargoniums, Cinerarias, Calceolarias, &c., and keep them close for a few days after the operation. Green fly to be kept down by fumigation. Pot Verbenas to supply cuttings. Heliotropes may also be placed in heat for the same purpose. Fuchsias for general decoration, or as single specimens on grass, to be brought from their winter quarters without further delay, and introduced to a warm end of the greenhouse; but where there is bottom heat to spare, select some of the best plants, dis-root and repot, and plunge them in a bottom heat of 75°.

FORCING-PIT.

Continue to introduce plants of Hydrangea hortensis, Roses in varieties, Pinks, Carnations, Rhododendrons, Kalmias, Ledums, Pelargoniums, Heliotropes, Azaleas in variety. Sow Balsams, Cockscombs, Globe Amaranths, &c.

PITS AND FRAMES.

Plants which are growing in these structures will require to be carefully watched, as the warmth occasioned by the increased power of the sun in the daytime will induce a too-rapid progress at the expense of constitutional strength and vigour; it is, therefore, desirable to keep them as cool as may be found to be practicable, by allowing the free ingress of the external air. Anything like close confinement when the sun is shining on the frames will certainly be injurious; at the same time, if the air is very keen and cutting, the lights must be opened on the side least exposed, and in such a manner as to prevent the cold draught from acting injuriously on the plants. Auriculas should have the decayed and decaying leaves removed, and, if not already done, a top-dressing of fresh compost. A gradual increase may take place in the supply of water. Carnations and Picotees in pots require to be kept clean and comparatively dry, and they should have the surface soil about them frequently stirred and lightened-up. The compost for potting them in due time may be got ready; it may consist of one-half turfy loam, one-fourth of manure reduced to the state of fine mould, cow-dung is preferable where it can be procured in a decomposed state, and one-fourth of coarse gritty sand, which may be road or river sand.

W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Doing Things Seasonably.—The continual drizzle that has followed the frost has considerably delayed a number of out-door operations. It is always true economy to avoid going to a job that would necessitate the making of a second. For instance, we have known work done on a lawn because the manager was such a disciple of order, and would finish one thing before he commenced another, that the making all right afterwards took up more time than the job itself would have occupied under suitable circumstances, so that on the question of economy alone, the men might just as well have been sitting in a comfortable place as at work in unsuitable weather. I know of no garden, however large or small, where there would be any necessity for men being idle in the worst weather if the work is done with judgment. Some years ago I had occasion to go to a place twice in February; at one time the men were wheeling gravel, with the wheels of the barrows half buried in mud, and the men looking as wobegone as half-drowned rats. At the other visit there had been a crisping frost, and the day was bright and clear, and the men were mostly in a vinery, cleaning and washing Vines, and obliged to give plenty of air to prevent the sun scorching their heads. The Vines would just have been the work for the wet day, or even for part of a day that was wet, method or no method notwithstanding.

Cauliflower has stood the winter well as yet in frames, hand-lights, and out of doors; but where this is not the case, a few should be sown on a slight hotbed, along with Lettuces, Cabbages, &c. I often find that Lettuces so sown, pricked out, and gradually hardened off, come in pretty well as soon as those that stand the winter. The Hammersmith Cabbage Lettuce is about the first to come in out of doors, after standing the winter. Lettuces generally stand it best at the foot of a wall—the ground, if not hard before, having been trodden to make it so, and then just scratched enough with a rake to bed the seeds, or the least covering of fine stuff should be thrown over them. If this is done from the middle to the end of September, the plants, from the hardness of the ground, generally grow short and stubby, and the frost and continued rains have less effect on them. Where these vegetables are in plenty from the autumn sowing, it will be time enough to sow Lettuces out of doors in the middle of March; but Cauliflowers should be sown about the same time in a little heat. Though slight hotbeds are spoken of for this purpose, yet a flower-pot will often be large enough to sow in for small gardens. For instance, Cauliflower seed sown in a pot at that time might be placed near the fireplace; and when the seedlings appeared the pot could be transferred to the greenhouse or window, and the plants individually pricked out when they are from 1½ inch to 2 inches in height.

Planted more Potatoes in beds, the soil being rather wet for out-of-door work; thinned young Carrot-bed; sowed a few more Radishes; transplanted Dwarf Kidney Beans out of seed-box into 8-inch pots, and sowed more, which most likely will be transplanted into beds—the transplanting until April enabling us, we think, to get more pods from the same amount of rows. Earthed-up Potatoes in pots, and transferred Peas from small pots to larger ones, to produce their pods in. Found we had no proper place for sowing Peas in turf, to be transplanted next month, and therefore sowed some in good-sized pots; also sowed Beans. In general, we would prefer shallow boxes to either pots or turves; the only fault we have with the latter, being that if the turves are at all close and rather sour in quality they seem to prevent the neck of the plants expanding healthily and freely after being turned out. When turves are used we prefer them to be at least 2 inches thick, 4 inches wide, and 12 inches long. These are laid on a suitable place, such as the floor of a Peach-house or vinery at work, grass-side downwards. A hole is then made in the centre of each, 1 inch wide and nearly 1 inch deep. The seeds are sown along, watered, and then covered with fine sifted soil or leaf mould. When the Peas are 4 inches high they should be moved out and hardened off by protection in a cooler place before finally transplanting. This moving can be done much better in boxes—say 9 inches wide, 6 inches deep, and 3 feet to 4 feet in length; and then in planting in patches from the boxes, it strikes us there is more of a check given at first, which hastens fruiting or podding, whilst the plants grow away freely afterwards.

FRUIT GARDEN.

Pruned Plums, Apricots, and a few Peaches, in fine hours as we could get at them. Got a flat board and waved it briskly with the hand a few inches from the bloom in the Peach-house, to scatter the pollen, especially when there was a little sun, as on the afternoon of the 18th. Dusted with a feather Strawberries in bloom, and commenced in favourable times to paint the Peach trees, so as to smother up all insects and their eggs, having more faith in this daubing than in the mere materials of which it is composed. A little tobacco water, soft soap, sulphur, and clay, are a good mixture for such a purpose. I notice a correspondent recommends painting a wall all over with Gishurst Compound, to fill the holes and prevent the woodlice getting into them or trying to open them, telling us that they will not touch it. On the score of trouble, however, I still think that the double limewashing would be the east, and I am doubtful if the Gishurst would prevent these gentry making holes for themselves as soon as it was dry. At any rate, I have seen them lying in boxes of the Compound, and also recollect, when I washed the outsides of some pots with soft soap and sulphur, and a little oil in the mixture besides, to prevent them getting at some choice delicate seedlings, they not only managed to waddle through the rather liquid stuff, but seemed to live on it too. The onl[illegible] common things which [illegible] found they would not pass over [illegible] long as it was liqu[illegible] [illegible] even when they try. The modes of trapping have been often referred to.

PLANTS AND PLEASURE GROUND.

Proceeded with potting and cuttings much the same as last week. Potting a few variegated Geraniums from boxes where they stand thick, placing them singly in small pots, and giving them a little heat, and whenever the roots begin to ball will turn them out into an intermediate-bed to save watering and get the pots.

WALKS.

On this subject we have had several inquiries. First, as to the position of drainage; second, as to the depth of walks; and thirdly, as to the best material—gravel, pebbles, flags, or home-made asphalt. We shall now only say, that for six-feet walks we prefer a single drain in the middle with gratings at the sides. For a twelve and on to a twenty-feet walk we would prefer a drain at each side. For walks on steep inclines it would be advisable to pitch the sides with pebbles, and have cross open drains, such as four-inch iron pipes with an opening of an inch, placed across the walk, which would prevent the running of the walks in heavy rains, though this can be greatly avoided by using open bottoms for walks, however smooth and fine the surface. Where pebbles of somewhat equal size can be got, walks will be not only more lasting but much cheaper than gravel, and flagstones, though dearer at first, will ultimately be far cheaper than gravel. The two most expensive things in the long run in a garden, are a well-kept lawn and a good gravel-walk. Just think of the first making of the latter, the constant repairs it needs, the ever-and-anon turnings, brushings, sweepings, and rollings, and then think of the switch now and then over a stone pavement, and the little trouble it gives, if allowed to get a little mossy. But, after all, nothing is so agreeable to the feet as a nice gravel walk, even asphalted ones will not compare in this respect with it. The other matters at a future time.—R. F.

TRADE LISTS RECEIVED.

Descriptive Catalogue of Florists' Flowers, &c., cultivated and sold by Downie, Laird, and Laing, Stanstead Park, Forest Hill, and at Edinburgh. This is one of the best catalogues of florists' flowers we know; so full, and so useful is it.

A Catalogue of Select Vegetable, Flower, and Farm Seeds, by William Cutbush & Son, Highgate, N., contains good selections of seeds, with descriptive remarks.

A Catalogue of Pelargoniums, Fuchsias, Verbenas, Petunias, Dahlias, &c., by George Smith, Tollington Nursery, Hornsey Road, London, N., is another of those first-class Florists' Flower Lists; these being a *spécialité* for which Mr. Smith has long been celebrated.

A Select Catalogue of Flower, Vegetable, and Agricultural Seeds, by B. S. Williams, Holloway, N. A nice pamphlet, of 56 pages, containing well-selected lists, and good descriptive notes.

Choice Vegetable and Flower Seeds, by James Dickson & Sons, 102, Eastgate Street, Chester. This is a very neat and well-got-up catalogue, and has the evidence of care having been bestowed on the preparation of it.

A Catalogue of Vegetable, Flower, and Agricultural Seeds, &c., by Robert Parker, Tooting, S., is also a well-selected catalogue, and contains numerous useful notes on the articles offered for sale.

Descriptive Catalogue of Flower Seeds, Vegetable Seeds, &c., by B. J. Edwards, 222, Strand, London, is a good list of flower seeds arranged in the tabular form.

Catalogue of Vegetable and Flower Seeds &c., by Dickson and Brown, Corporation Street, Manchester, is a quarto pamphlet, abounding in descriptive notes and cultural information.

Catalogue of Nursery Stock, sold by W. H. Rogers, Red Lodge Nursery, Southampton, contains a list of the usual stock of a well-appointed nursery, and especially of Rhododendrons and Roses.

[illegible]talogue of Culinary, Agricultural, and Flower Seeds, by [illegible] Dixon & Sons, Hull. This is in the old double-sheet form catalogue, very unusual now-a-days. It is evidently prepared [illegible]ilitate the giving of orders and save purchasers the trouble [illegible]ting out the list [illegible] articles they require,—blank columns [illegible] furnished [illegible] insert the quantities required [illegible]

TO CORRESPONDENTS.

,* We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

'e also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

'e cannot reply privately to any communication unless under very special circumstances.

Nymphæa (*A. B. W.*).—The Nymphæa cœrulea is very fragrant. The ırseryman must have sold you a different species—perhaps N. stellata.

Poinsettia pulcherrima Culture (*Idem*).—Grow them where they can ıve from 50° to 60° at least. This will stop the yellowing of the leaves, ıd help to ripen the back buds for next season. As to flowers, if you have ıy, they will be small. The flowers, of course, you know at any time are ıt much. The crimson bracts, or floral leaves, are the great attraction; ıd a mass of them, resembling in width an old-fashioned, broad-brimmed, ıe bonnet, can only be obtained from the points of strong, well-matured oots. Do what you will there are many plants which will never be cut to a bush-form, and this is one of them. All you can do with an oldish ant is to get a certain number of shoots to start somewhat equal in strength first, and to secure several shoots on young plants. No stopping should ke place after the end of May. The plants grow freely in peat and loam, ith a little broken bricks and lime rubbish; and, when growing freely, ill be benefited by a mulching of rotten old cowdung. After the middle June they must have all the light possible, and a fair amount of heat. ır this latter purpose they may be kept in a forcing-house, plant-stove, or, ıtil the middle of September, in a cold pit kept moist and close. After at, the plants should have more air and less water, and be secured from ld nights, and they will show to advantage in November and December. 'hen done flowering keep the plants dryish, so that they do not shrivel. ıck them close together when the leaves fall, and anywhere, so that the mperature ranges from 45° to 50°. In spring prune back to the last bud two on the last year's shoots. When the buds are started, repot and ow on again for next year.

Gas Tar for Asphalt Walks (*C. T. H., Dorset*).—Take two parts lime bbish, and one part coal ashes, both sifted fine, and both very dry. In a y place, on a dry day, mix them thoroughly; form a hole in the mixture bricklayers do in making mortar. Into this hole pour boiling hot coal r, mix, and when as stiff as mortar put it 3 inches thick where the walk is be. The ground on which the mixture is put should be dry, and beaten ırd and smooth. Sprinkle coarse sand over the surface of the mixture ıen smoothed, after being spread for the walk. When cold, pass a light ller over it, and in a few days the walk will be solid, and weed and wateroof. Gordon's "Pinetum" will suit you. We hear that a second edition in preparation.

Glazed Wall for a Vinery.—Referring to the Number dated 14th of nuary, 1862, page 317, I may state that I made a mistake in saying "two" ds from each Vine. I have no "top" ventilation, but plenty of "Moore's ıtent Ventilators," both at the ends and in the front. I shall not know ıether there is sufficient air by these openings, till after a fair trial; but ›elieve from the existing heat on a sunny day, that it will be a Pine-stove at in summer. The sorts of Vines are as follows:—Black and White ıscat of Alexandria, Eschollata, Trebbiano, Sarbelle, St. Laurent, White ce, Black Hamburgh, Champion Hamburgh, Gros Maroc, Gros Colmar, ıyal Muscadine, Bidwell's Seedling, Kempsey Alicante. Will these suit gether?—A Subscriber.

[You should grow Black and White Muscat of Alexandria, Eschollata, ebbiano, Gros Maroc, Gros Colmar and Kempsey Alicante in one house, they require more heat than the others. Where did you get the plant of ıck Muscat of Alexandria from?]

Flower-Garden Plan (*An Old Subscriber*).—You have planted the rden as well as any one could. Mixed Verbenas do better in beds lying wards the centre of a garden than beds of one kind, as the colours are ın weaker—a desirable feature in the centre.

Bulbs in Moss (*Idem*).—We never saw or heard of much difficulty of ocuses, Tulips, and Hyacinths doing well in damp moss. The fault must ve been in the "roots" not having been quite ripe when dried. We have own the very same kinds in moss over and over again without a spot speck.

Cochlearia acaulis Culture (*Idem*).—It is the prettiest little thing a mantle-piece plant the whole year round, and nothing is more easy to ow. Sow the seeds on the surface, in-doors or out of doors, press it down, d do not cover it, or but very slightly indeed, and sow it the year round actly as you would do Mustard and Cress for table, and when it is in wer take it up in patches and pot or box it.

Plant Prize at the York Horticultural Gala.—The Committee have ided £25 into three prizes for twelve plants. It states that twelve plants a species may be shown; either twelve Geraniums, Calceolarias, Ericas, stove or greenhouse plants can be shown, or two, three, or four of each. s object of this application is to know how the above are to be judged to e satisfaction.—Ebor.

[It will be very difficult for the judges to decide. Indeed, it will be imssible to award a prize satisfactorily where competition is permitted ween twelve of one species against twelve miscellaneous plants.]

Dissolving Indiarubber in Naptha (*W. T. P. H.*).—The naptha reres to be kept hot, and for some days before it will dissolve the Indiaıber. Spirit of turpentine kept hot also dissolves Indiarubber.

Book on Vinery Culture (*R. B. W.*).—Sanders "On the Culture of Vine" is as good as any.

Ribbon-Border (*C. G.*).—Annuals will not do for ribbon-rows anyhow. Two good things would be spoiled that way. You have sufficient time to raise from seeds as many plants of Lobelia speciosa as would plant the front rows of all the ribbon-borders of your county, and a patch or two of the Cerastium tomentosum would go a long way at the back of Lobelia, and 5 inches or 6 inches from it, or you might sow a row of Mignonette 10 inches from the Lobelia; and a third row of any annual, as Clarkia pulchella, and that row to be filled again in August with China Asters sown out of doors at the beginning of May. The Potato or Underground Onion is planted pressed into the surface of the soil, just like Shallots.

Herbaceous Plants for Shrubbery-border (*Subscriber*).—The old practice of having herbaceous plants in shrubbery-borders is all but extinct, for none will grow there but the coarsest kinds. Grow there as many kinds of Iris as you can obtain; the same with Pæonies, old kinds of Phloxes, Pentstemons, Potentillas, Campanulas, Veronicas, Rudbeckias, Asters, Coreopsis, and Golden Rods. There are a great number of kinds of all these, any one of which will do as well as another. We never recommend flowering plants for ferneries at all.

Plants for Hanging-basket (*Subscriber*).—The best looking arrangement for a flower-basket is to have the middle all of one colour, the edging of another colour. A scarlet Tom Thumb colour is the richest centre, and Lobelia speciosa all round it is the best edging. Tropæolum elegans is the best of them for training round a basket, but there is a vast amount of attention required in the training.

Drying Tobacco (*B. W.*).—Your specimen was mild but good. It never is so pungent when grown in England as it is when grown where the summers are hotter. The plant ought to be cut down close to the ground just when beginning to flower, dried gradually, then be put in a tub or box, pressed firmly, and kept in a dry place. The tub or box ought to be full to induce a gentle fermentation.

Red Spider on Vines (*H. G.*).—Paint the Hamburghs as well as the Black Princes with the lime and sulphur mixture. Indeed, we recommend you to paint similarly the whole interior of the house. Ventilate more freely, and keep the air moister than you have in previous years.

Various (*A Constant Reader*).—Ants are not injurious; but if you wish to drive them from your greenhouse, pour ammoniacal liquor from a gaswork, or sprinkle guano over their haunt twice or thrice weekly until they evacuate the place. For four penny postage stamps you can have No. 590 of this Journal from our office free by post. It contains a longer list of greenhouse plants than we can find room for to-day; and the hints there given will enable you to choose better than we can what will suit you. Nothing will grow well in the sunless, draughty border you mention. Try the Berberis aquifolium, or Holly-leaved Berberry.

Protection from Birds and Moss (*F. H. L.*).—There is no effectual protector of fruit-tree buds from birds but the gun, or a boy to scare them away. To prevent and to remove moss on your lawn, the soil being rather wet, you must have recourse to draining, and then to frequent rolling.

Carcases of Animals (*A Devonshire Vicar*).—There is no better mode of rendering these available as a manure than by removing the flesh and entrails from the skeleton; putting the former in layers alternately with earth, one of the best of deodorisers, and dissolving the bones, after breaking them into pieces, in sulphuric acid.

Increase of Glazed Space (*A. H. M.*).—Both your plans will answer. Your flue may be continued 20 feet or 30 feet further along the wall, and be used only when wanted. The socket-pipes will do as you propose. If the span-house as proposed is preferred, or added, a useful one would be 10 feet wide, height at ridge 8 feet, and at front 5 feet, or even 4 feet, if you had the ridge about 7 feet, and had a bed or sparred table on each side, such a house entirely of wood and glass, and all the glass fixed as stated the other week would not cost much, but still more than the lean-to, as the wall is already there.

Leaves of Orange Trees Scorched (*A Constant Subscriber*).—The leaf that reached us had the appearance of scorching, either by hot vapour from a heating medium, or from the sun striking fiercely on the leaves whilst they were damp, and probably from some rough points in the glass. If only a few leaves have this appearance it will not much signify, as the old ones are apt to assume this appearance at times before they fall. There is much difference in evergreens shedding their leaves, though all do so less or more: hence Laurels and other evergreens are a constant cause of sweeping being needful in summer.

Manetti Rose Stocks (*J. M.*).—You will have no end of trouble if you bud Manetti stocks from a nursery—you will never more be free from Manetti suckers as long as you live: therefore, you may cut down the nursery stocks to the last eye or two, and from one of them endeavour to get a clean, clear, supple shoot and bud as early as the bark at the very bottom of the shoot will "run." But the right way of doing the Manetti is to make the cuttings 6 inches or 8 inches, or even 9 inches long, at the end of October, and pick out the buds with a knife all but the two nearest the top; to plant the cuttings only 3 inches deep, then to mould them up in ridges to near the top, and to have them so wide apart as to be able to bud them next summer where they stand, at budding time to undo the ridge of mould when the bark from the covering is just as soft as it was last autumn, and perhaps more soft. By that, the best way, you never have a sucker of Manetti at all, even if you do not bury the worked part so as to have your Roses ultimately on their own roots—the best roots of all for all kinds of Roses with some few exceptions.

Sandy Soil (*Sand Oh!*).—We would rather have sand than clay for a garden soil. Add to it all the materials you can that will improve its staple, such as chalk, limy rubbish and clay, and keep the surface about newly planted trees, cabbages, &c. mulched with fresh seaweed. Your situation is bleak enough on the Liverpool coast, but not more so than the coast of Norfolk; and you will find in our last Number a list of trees which succeed there. You will also see in our pages to-day that Lord Palmerston has succeeded with Pinus maritima. We recommend this to you strongly. You will also see to-day what we say about seaweed as a manure. Do not neglect that. Shells reduced to powder will improve your soil. What is your subsoil? If it contains clay or chalk it should be dug up and mixed with the surface soil.

Ferns (*Marianne*).—Your questions are too indefinite. Some Ferns will grow nowhere but in a house—but what house is yours? Some Aspleniums would grow out of doors in Staffordshire.

Spring Pruning (*A Regular Subscriber*).—No Spiræa or Weigela must ever be pruned in the spring, except to thin out dead shoots or very old shoots. The time to prune them is once in ten or twelve years when they get too big for a place. There is a most mistaken predilection abroad about pruning all sorts of plants whether they need it or not. Your Spiræa, whatever the kind is, and your Weigela rosea will not want one morsel off them by pruning for the next seven years certain; so say no more about pruning them just yet.

Potting Bedding Geraniums (*Idem*).—It would be a very good plan to pot old Scarlet Geraniums now, which have been at rest during the winter in boxes and all manner of ways. All their very small roots are now as dead as those of our own stock, and we mean to cut them all back to the quick, or live parts; but we have no notion where to put them now, so they must chance it as they are for six more weeks at the least. They must not be cut back, however, at the time of spring potting, as so many kinds of them are apt to perish or damp back in the shoots just at that period if pruned; but as soon after potting as they are full of leaves they may be reduced for spring cuttings.

Gladioli for Beds and Pots (*Idem*).—The best Gladioli for pots are those of Gandavensis as they call them, and of the cheap sorts of them Brenchleyensis is the best. Bowiensis is also an excellent bedder of itself and will do in pots, and both are of the cheapest. Then lighter, are Ariosto and Archimédé; Berenice is also fine and very cheap, and Couranti fulgens is the cheapest of all, and is as good as many are at 7*s.* 6*d.* a-piece. Hélène is a fine light kind, cheap as Impératrice, which is also of a whitish cast, and cheap. Madame Herincq is a third light one, not at all inferior to the more fashionable and dearer varieties.

Royal Horticultural Society (*Querist*).—If you write to Mr. Murray, the Under-Secretary's offices, Kensington Gore, he will have you proposed as a Fellow. The entrance-fee is two guineas, and the annual payment the same. We know of no mode of obtaining a situation such as you name except by advertising. The office of book-keeper to the Society was vacant recently, and there were for it more than three hundred applicants.

Citron Melon (*An Inquirer*).—The cultivation it requires is the same as that required by any other Melon.

Fern Altered in Form (*Sabina*).—Your Fern (Pteris argyræa) is not eaten that we can discover, but has sported so far as to produce some of its parts in an abnormal and depauperated state. It may have been inherent in the plant from the spore—a true sport, in which case the plant will go on growing in this way; or it may be purely accidental, as one would say, and then the plant will grow out of it.

Lilium giganteum Culture (*A Young Gardener*).—Grow it in a 14-inch pot, using fibry loam and a little peat for soil. Keep it rather dry until it begins to grow, and then give it plenty of weak manure waterings, taking care that the whole ball is moistened. Keep it well supplied with moisture. When the leaves begin to decay, gradually allow the soil to become dryish. When fresh potting is required, do it whilst the leaves are yet green after flowering is over. This Journal is bound in half-yearly volumes, commencing alternately in April and October. We do not know when another edition of the *Cottage Gardener's Dictionary* will be published.

Eradicating Fern (*A Subscriber*).—There is no better mode of eradicating the common Brake Fern (*Pteris aquilina*), than by keeping its fronds constantly cut down as they appear, and sowing salt thickly over the place.

Names of Plants (*G. H. J. W.*).—Gnidia simplex. The leaf is apparently that of some species of Hakea. Both are greenhouse shrubs; the first preferring rather a sandy and peaty soil, the second preferring a little more loam. (*Amateur*).—1, Rhamnus alaternus; 2, Kalmia glauca. We believe the Tangerine *Orange*, cultivated in Brazil, to be a distinct species, and so are the other two which you mention. The Otaheite Orange, very small, is the Citrus japonica; and the Mandarin Orange, very large, is Citrus nobilis. (*Quercus*).—1, Taxus empetrifolia; 2, Torreya nucifera; 3, Pinus pinaster; 4, Abies canadensis.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

March 1st. Halifax. *Sec.*, Mr. J. W. Thompson, Southowram, near Halifax. Entries close February 20th.

May 14th and 15th. Taunton and Somerset. *Sec.*, Charles Ballance, Esq., Taunton.

May 27th, 28th and 29th. Bath and West of England (City of Wells). *Steward*, S. Pitman, Esq., Manor House, Taunton. Entries close May 1.

June 4th and 5th. Beverley and East Riding. *Sec.*, Mr. Harry Adams.

JAVA SPARROW AFFECTED WITH COLD.

Etta has two Java Sparrows, one of which has attacks of asthma, lasting sometimes two or three hours. The bird looks ill and is thin, and does not eat much. She would be glad to know if anything would cure it, and what treatment it should have. It will only eat canary-seed and a little rice. She has tried hard-boiled egg, biscuit, and bread and milk, but the bird will not touch either. A drop or two of sherry given on a camel's-hair brush during the attack sometimes seems to do good. Should the birds be kept warm? The attack begins with violent coughing, which subsides into a sort of croaking, the bird opening and shutting its beak incessantly; it eats nothing during [illegible] well though [illegible]her pu[illegible]

[illegible]

put in a spoon over the fire with a little milk until warm, and with a quill put a little in its mouth, and the remainder in the cage in a small pan, to be repeated for two or three days. Give it boiled egg, maw and hemp seed, with the food it has been accustomed to. The bird should be kept warm.]

THE CANARY AND THE BRITISH FINCHES.

(*Continued from page* 426.)

MULE BREEDING.

The crossing of different species of birds, or Mule-breeding, is an interesting amusement much in vogue among bird-fanciers, and it may be divided into two branches; the first or general plan being that of breeding from a hen Canary and some other male bird—the Canary being a domesticated bird and breeding readily in a cage, it is by far the easier method, and consequently more practised.

The second, where the hen or both parents are of a wild or undomesticated kind is much more difficult, and the Mules thus produced are much less common, and consequently more valuable; for it must at once be admitted, that where the hen is of a wild race and does not readily incubate in confinement, the greater trouble entailed in the rearing of such Mules must necessarily influence their production, and the greater trouble in procuring them will enhance their value. Again: the more nearly allied the species, and the greater the resemblance in the natural habits, the easier will a union be brought about. From this cause Linnet and Goldfinch Mules are by far the commonest, while those birds that are less similar in those particulars are the more difficult to bring together to a successful union; as for instance, the Chaffinch, Bullfinch, or Yellow Hammer, of which sorts Mules with the Canary are very rare.

Having paid some attention to the raising of Mules, I will, in this chapter, offer a few remarks as a guide to the intending amateur. In the first case it is usual to select young and healthy hen Canaries, and mate them with cock birds of a different species. Of all birds that I am acquainted with that inhabit this country, I consider the Grey or Brown Linnet the nearest allied to the Canary, and it therefore follows that it is the easiest to couple with the Canary, and the most certain to produce Mules; even a fresh-caught cock Linnet, if taken in spring will often readily pair with a hen Canary; and she, being a tame and already-domesticated bird, readily builds her nest, lays, incubates, and rears her young in confinement. If, however, the cock Linnet is rendered tame and partially domesticated by being taken from the nest, brought up by hand, and used to the society of Canaries, they will breed so readily with them that there is scarcely any more trouble in breeding Linnet Mules than in rearing Canaries. These Mules are generally of a greyish colour, intermediate in shade between a Grey Canary and a Linnet. Occasionally Pied Linnet Mules are bred, and these are considered more valuable as being rarer. The Linnet Mule is, however, mostly prized for its song, in which it is thought, if properly trained, to excel all others of the Finch tribe. Next in order stands the Goldfinch for tractability, and the ease with which it mates with the Canary; and as its colours are more beautiful, perhaps there are more Goldfinch Mules bred than any other kind. There are, however, several varieties or, perhaps more properly speaking, sub-varieties of Goldfinch, and they vary much in disposition. I have never found any difficulty in breeding from any of them, but it is as well to have them somewhat tamed—either raised from the nest, or kept in a cage over one year. The Goldfinch is, however, a restless and rather mischievous bird, and sometimes takes an oological turn that is very provoking. In such cases he must be watched and shut off from the hen when about to lay. The egg having been laid and removed, he may be let into the hen again each time until the hen sits, when he should be removed or put to another hen. From my own experience, I should say that the little dark Goldfinch with greenish wing, shoulders, and dark legs is the most given to these mischievous propensities; while the large light-coloured, or as it is sometimes called the Pear-tree Goldfinch, is the most tractable and produces the handsomest Mules; the rearing of these and all other Mules is performed similarly to the breeding of Canaries as previously described.

[illegible] Mul[illegible] prize[illegible] for their singing when they

ight some particular strain or fancy song, and according
: performance are they valued.
generality of these Mules are of a dull colour, intermediate
n a Goldfinch and a Grey Canary, being much less hand-
han the Goldfinch, and no more value than a Canary, un-
before mentioned, of a good song. But the great de-
um of Goldfinch Mule-breeders is to produce them beauti-
nd accurately Pied; when this is obtained, and feather
ed with song, they become very valuable. These may be
mealy or jonque Pieds, and the more regular the mark-
better. In the mealy the ground colour of the plumage
e, while in the jonque it is yellow; the nearer it ap-
es to jonquil or orange the more it is valued. The mark-
t is most aimed at is to obtain a clear body with the
houlders as nearly like the Goldfinch's as possible. There
tly a mark across the eyes, and some of the tail-feathers
k; in this case they should be equal on either side; but
tter that the tail be all of one colour. The pinion or flight-
s are usually white, with the yellow mark of the Gold-
n them. Sometimes the Goldfinch Mule is quite clear
ee from all marks; but such are rare, and I once saw a
on Pied.

y curious notions are advanced by fanciers who have been
essful in breeding Pied Mules; but the plan which I
is most successful is to use hen Canaries that are
xpressly for the purpose. These are selected of the re-
Pied-marking birds that have been bred from Pieds for
generations. The more accurate the division of colour
tter. These are bred in-and-in for a generation or two, as,
tance, father and daughter, and then brother and sister,
red down soft in colour" so as to produce a tendency to
light or albino young. Of course this incestuous breeding
s degeneracy, still the cross with the Goldfinch gives more
, but generally retains the light colour. This I am in-
l is the whole secret of successful Pied Mule breeding.
the Goldfinch come the Siskin or Aberdevine, the Twite,
e Redpole, all of which will breed with the Canary with-
y very great trouble.
n the Greenfinch, Mules from which are somewhat rare, on
t of the pugnacity and rough gallantry of this strong
rightening the more timid hen Canary; yet if the Green-
s brought up from the nest, kept tame till he is two years
nd then put to a large robust hen Canary, they will
breed well. Some of mine would feed their hybrid off-
as well as a cock Canary; but they are not always to be
l—many being very vicious. The Chaffinch, Sparrow,
ch, and Yellow Hammer, have also been known to breed
he Canary, for which purpose they should be brought up
rom the nest, and accustomed to the society of Canaries:
etter if they were raised from the egg by Canaries; but
hen there is so much dissimilarity between the nature of
ds, their habits, food, sexual signs, and language, that it
rarely they will couple successfully.

second method of breeding Mules from the hens of wild
is attended with more trouble than when hen Canaries
ed—not that a cock Canary will refuse to mate with other
but because the hens, even though reared from the nest
ept tame, will rarely build and incubate in cages. Thus
hould be bred in a room or aviary; or if in a cage, then
nerally necessary to keep Canaries to hatch and rear the
hat may be dropped by these birds. It is said, as the
take more after the father than the mother, that Mules
rom a cock Canary are handsomer than those bred from a
anary; how this may be I cannot say from my own ex-
ce.

en both parents are of wild undomesticated species, the
e and uncertainty must be proportionately greater; conse-
y the Mules are on that account more highly prized.
birds should be reared from the nest, rendered as tame
omestic as possible, and they should be accustomed to
other in early life. If separated just before the breeding
nd brought together again at the right season, they will
mes couple; if eggs are the consequence they should be
under Canaries.

rids were exhibited between the
oldfinch and Bullfinch,
oldfinch and Greenfinch,
oldfinch and Grey Linnet, and also between
reenfinch and Grey Linnet,
Crystal Palace Bird Show, January, 1862.—B. P. BRENT.

BEES NATIVES OF ENGLAND.

BEES are mentioned in some of our earliest national records, and the mention of them is such as demonstrates how highly they were valued. Nor is this a cause for surprise, inasmuch as that mead or metheglin was the choicest drink of the Britons feasts; and although the household of the Prince of Wales, one thousand years ago, comprised but twenty-four officials, the eleventh of them was the mead-maker, and he ranked next before the royal physician.

So highly was superior mead prized in those days, that one of the royal privileges was to have the first offer of every cask that was intended to be sold.

We are accustomed to consider our forefathers of those days as rude and barbarous, and they were so if measured by our present standards of habits and education; but compared with contemporary nations they appear to advantage, for their laws and customs were fully equal in good sense to those of their neighbours on the Continent. As an illustration, we will quote from the laws relative to bees enforced by Howel Dha, who was chief ruler of Wales about A.D. 940.

"OF THE PRICE OF BEES.

"An old hive is valued at 24 pence.

"A spring swarm at 16 pence.

"A second swarm at 12 pence.

"A swarm from a first swarm at 12 pence.

"A swarm from a second swarm at 8 pence.

"A swarm after the Calends of August at 4 pence, and that shall be the price until the Calends of November.

"After the Calends of November an old hive is valued at 24 pence; and the swarm which came off after the Calends of August shall not be considered as an old swarm before the Calends of May, and then it shall be valued at 24 pence.

"Three huntings are free (that is, you may follow them upon another man's ground), of a swarm of bees settled upon a branch, and of a Fox, and of an Otter, because they have no certain abode.

"Bees were first born in Paradise, and were driven thence on account of man's sin, but God blessed them: therefore mass ought not to be sung without their wax being present.

"He who finds a swarm resting on a branch in another man's land shall receive 4 pence from the possessor of the land, if the latter wishes to retain the swarm.

"No swarm shall be valued at more than 4 pence until it has remained quietly for three days and three nights in the same place, and that in fine weather. Of those days the first is required to ascertain whether it will settle; another in examining whether it will cluster; and the third whether it will continue here.—(*Wotton's Leges Wallicæ*, page 254.)

BEES AS CHEMISTS.

IF the opinion of one of our most experienced chemists will serve to throw any light upon the question, now under discussion in your pages, as to the origin of honey, it is at your service.

A few days since, in a conversation, his remarks were to this effect—"I cannot imagine any chemical agency in the stomach or honey-bag of the bee. The artificial syrup of sugar given as food is itself a very near approach to that derived from flowers naturally, and it remains but a few seconds or minutes in the bag it passes through. The slight warmth could have but little effect till the syrup was emptied into the cells of the combs. Here it might acquire a little of the aroma of the hive, and of the wax in which it had been deposited. The absorption of a portion of oxygen from the atmosphere would tend to give it more consistence possibly, and you may call the result honey if you please."—H. TAYLOR.

THE SUPER-POSING DIFFICULTY.

SURELY your excellent correspondent, "B. & W.," jests when at page 368 he says, "The tone of the 'RENFREWSHIRE BEE-KEEPER'S' remarks, who seemed to deny the possession of eyes and practical knowledge to our respected apiarian friend in Devonshire," as I cannot suppose my remarks would bear any such construction. On the contrary, I can assure "B. & W." that I entertain a most favourable opinion of his own practical knowledge, as displayed in his useful and interesting work "The English Bee-keeper," the perusal of which afforded me not a

Spring Pruning (*A Regular Subscriber*).—No Spiræa or Weigela must ever be pruned in the spring, except to thin out dead shoots or very old shoots. The time to prune them is once in ten or twelve years, when they get too big for a place. There is a most mistaken predilection abroad about pruning all sorts of plants whether they need it or not. Your Spiræa, whatever the kind is, and your Weigela rosea will not want one morsel off them by pruning for the next seven years certain; so say no more about pruning them just yet.

Potting Bedding Geraniums (*Idem*).—It would be a very good plan to pot old Scarlet Geraniums now, which have been at rest during the winter in boxes and all manner of ways. All their very small roots are now as dead as those of our own stock, and we mean to cut them all back to the quick, or live parts; but we have no notion where to put them now, so they must chance it as they are for six more weeks at the least. They must not be cut back, however, at the time of spring potting, as so many kinds of them are apt to perish or damp back in the shoots just at that period if pruned; but as soon after potting as they are full of leaves they may be reduced for spring cuttings.

Gladioli for Beds and Pots (*Idem*).—The best Gladioli for pots are those of Gandavensis as they call them, and of the cheap sorts of them Brenchleyensis is the best. Bowiensis is also an excellent bedder of itself and will do in pots, and both are of the cheapest. Then lighter, are Ariosto and Archimédé; Berenice is also fine and very cheap, and Couranti fulgens is the cheapest of all, and is as good as many are at 7*s.* 6*d.* a-piece. Hélène is a fine light kind, cheap as Impératrice, which is also of a whitish cast, and cheap. Madame Herincq is a third light one, not at all inferior to the more fashionable and dearer varieties.

Royal Horticultural Society (*Querist*).—If you write to Mr. Murray, the Under-Secretary's offices, Kensington Gore, he will have you proposed as a Fellow. The entrance-fee is two guineas, and the annual payment the same. We know of no mode of obtaining a situation such as you name except by advertising. The office of book-keeper to the Society was vacant recently, and there were for it more than three hundred applicants.

Citron Melon (*An Inquirer*).—The cultivation it requires is the same as that required by any other Melon.

Fern Altered in Form (*Sabina*).—Your Fern (Pteris argyræa) is not eaten that we can discover, but has sported so far as to produce some of its parts in an abnormal and depauperated state. It may have been inherent in the plant from the spore—a true sport, in which case the plant will go on growing in this way; or it may be purely accidental, as one would say, and then the plant will grow out of it.

Lilium giganteum Culture (*A Young Gardener*).—Grow it in a 14-inch pot, using fibry loam and a little peat for soil. Keep it rather dry until it begins to grow, and then give it plenty of weak manure waterings, taking care that the whole ball is moistened. Keep it well supplied with moisture. When the leaves begin to decay, gradually allow the soil to become dryish. When fresh potting is required, do it whilst the leaves are yet green after flowering is over. This Journal is bound in half-yearly volumes, commencing alternately in April and October. We do not know when another edition of the *Cottage Gardener's Dictionary* will be published.

Eradicating Fern (*A Subscriber*).—There is no better mode of eradicating the common Brake Fern (*Pteris aquilina*), than by keeping its fronds constantly cut down as they appear, and sowing salt thickly over the place.

Names of Plants (*G. H. J. W.*).—Gnidia simplex. The leaf is apparently that of some species of Hakea. Both are greenhouse shrubs; the first preferring rather a sandy and peaty soil, the second preferring a little more loam. (*Amateur*).—1, Rhamnus alaternus; 2, Kalmia glauca. We believe the Tangerine *Orange*, cultivated in Brazil, to be a distinct species, and so are the other two which you mention. The Otaheite Orange, very small, is the Citrus japonica; and the Mandarin Orange, very large, is Citrus nobilis. (*Quercus*).—1, Taxus empetrifolia; 2, Torreya nucifera; 3, Pinus pinaster; 4, Abies canadensis.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

March 1st. Halifax. *Sec.*, Mr. J. W. Thompson, Southowram, near Halifax. Entries close February 20th.

May 14th and 15th. Taunton and Somerset. *Sec.*, Charles Ballance, Esq., Taunton.

May 27th, 28th and 29th. Bath and West of England (City of Wells). *Steward*, S. Pitman, Esq., Manor House, Taunton. Entries close May 1.

June 4th and 5th. Beverley and East Riding. *Sec.*, Mr. Harry Adams.

JAVA SPARROW AFFECTED WITH COLD.

Etta has two Java Sparrows, one of which has attacks of asthma, lasting sometimes two or three hours. The bird looks ill and is thin, and does not eat much. She would be glad to know if anything would cure it, and what treatment it should have. It will only eat canary-seed and a little rice. She has tried hard-boiled egg, biscuit, and bread and milk, but the bird will not touch either. A drop or two of sherry given on a camel's-hair brush during the attack sometimes seems to do good. Should the birds be kept warm? The attack begins with violent coughing, which subsides into a sort of croaking, the bird opening and shutting its beak incessantly; it eats nothing during the attack, but at intervals is pretty well though rather puffy.

[The bird has a cold; give it a little sweet oil in the mouth with a quill [illegible] two drops, and a little moist sugar and bread put in a spoon over the fire with a little milk until warm, and with a quill put a little in its mouth, and the remainder in the cage in a small pan, to be repeated for two or three days. Give it boiled egg, maw and hemp seed, with the food it has been accustomed to. The bird should be kept warm.]

THE CANARY AND THE BRITISH FINCHES.

(*Continued from page 426.*)

MULE BREEDING.

The crossing of different species of birds, or Mule-breeding, is an interesting amusement much in vogue among bird-fanciers, and it may be divided into two branches; the first or general plan being that of breeding from a hen Canary and some other male bird—the Canary being a domesticated bird and breeding readily in a cage, it is by far the easier method, and consequently more practised.

The second, where the hen or both parents are of a wild or undomesticated kind is much more difficult, and the Mules thus produced are much less common, and consequently more valuable; for it must at once be admitted, that where the hen is of a wild race and does not readily incubate in confinement, the greater trouble entailed in the rearing of such Mules must necessarily influence their production, and the greater trouble in procuring them will enhance their value. Again: the more nearly allied the species, and the greater the resemblance in the natural habits, the easier will a union be brought about. From this cause Linnet and Goldfinch Mules are by far the commonest, while those birds that are less similar in those particulars are the most difficult to bring together to a successful union; as for instance, the Chaffinch, Bullfinch, or Yellow Hammer, of which sorts Mules with the Canary are very rare.

Having paid some attention to the raising of Mules, I will, in this chapter, offer a few remarks as a guide to the intending amateur. In the first case it is usual to select young and healthy hen Canaries, and mate them with cock birds of a different species. Of all birds that I am acquainted with that inhabit this country, I consider the Grey or Brown Linnet the nearest allied to the Canary, and it therefore follows that it is the easiest to couple with the Canary, and the most certain to produce Mules; even a fresh-caught cock Linnet, if taken in spring will often readily pair with a hen Canary; and she, being a tame and already-domesticated bird, readily builds her nest, lays, incubates, and rears her young in confinement. If, however, the cock Linnet is rendered tame and partially domesticated by being taken from the nest, brought up by hand, and used to the society of Canaries, they will breed so readily with them that there is scarcely any more trouble in breeding Linnet Mules than in rearing Canaries. These Mules are generally of a greyish colour, intermediate in shade between a Grey Canary and a Linnet. Occasionally Pied Linnet Mules are bred, and these are considered more valuable as being rarer. The Linnet Mule is, however, mostly prized for its song, in which it is thought, if properly trained, to excel all others of the Finch tribe. Next in order stands the Goldfinch for tractability, and the ease with which it mates with the Canary; and as its colours are more beautiful, perhaps there are more Goldfinch Mules bred than any other kind. There are, however, several varieties or, perhaps more properly speaking, sub-varieties of Goldfinch, and they vary much in disposition. I have never found any difficulty in breeding from any of them, but it is as well to have them somewhat tamed—either raised from the nest, or kept in a cage over one year. The Goldfinch is, however, a restless and rather mischievous bird, and sometimes takes an oological turn that is very provoking. In such cases he must be watched and shut off from the hen when about to lay. The egg having been laid and removed, he may be let into the hen again each time until the hen sits, when he should be removed or put to another hen. From my own experience, I should say that the little dark Goldfinch with greenish wing, shoulders, and dark legs is the most given to these mischievous propensities; while the large light-coloured, or as it is sometimes called the Pear-tree Goldfinch, is the most tractable and produces the handsomest Mules; the rearing of these and all other Mules is performed similarly to the breeding of Canaries as previously described.

Goldfinch Mules are also prized for their singing when they mentioned at page 78, and have generally escaped most e distressing combats so painful to the apiarian to witness; at the present moment, I only recollect of two such, which might have been averted. The one, a friend sent quantity of bees removed by fumigating his hives, of I was ignorant at the time; and, although gorged with ras much chagrined the following morning to find, not the ary dead queen, but nearly all the new comers on the floor-dead: had I only known they had been fumigated, a two from my fumigator to the stock previously would pt all right. The other case occurred some years ago, that ge late prime swarm, which, after being newly hived, missed ueen, and began to go back. On the spur of the moment ly resolved to unite them at once to a stock formed of two swarms of the same season, with the view of expediting npletion of a beautiful super, saving in addition further ng, and a second exodus, and, therefore, placed them below ck and drew the slides; but found the lower portion of my states as averse to union as southern planters at the present it. They, true to their old allegiance, would be off, hurried ess by a vigorous attack in their rear from the in-door nts of the stock; the rapidly increasing band of returning s in front would likely be suspicious the departing rs' well-distended honey bags were laden from their own and gallantly charged them in front to the cry doubtless op thief." Between two such fires the poor colonists isplayed an amount of killed and wounded I never wish again. Any stragglers escaping returned at once to old hive, which did not swarm again; the juncture, as rash proceeding justly merited, proving a total failure.

oving bees from frame-hives is easily effected by carrying ve to a little distance from its stand, raising the frames one, and with a few feathers sweeping the bees from off nb on to a table, where an empty hive is placed slightly on one side, into which they take refuge, the frames as being set into another covered empty hive hard by.

ld the hive not possess this facility, bees, in my opinion, t removed by driving. Like your contributor Mr. Hood, ave tried fungus (Neighbour's) at all seasons, and never ed the bad effects therefrom complained of by some ondents, possibly from using it more sparingly, the ity rarely exceeding the few bees over-dosed about the of the fumigator; still I much prefer the simple, more ical, and decidedly preferable plan of driving, by which at all times much more satisfactorily empty the hive. s causing many bees to take refuge in vacant cells from es, for the last two or three years I have almost entirely inued its use. I cannot account for so experienced a bee- as your last-named correspondent meeting with a want of in so simple an operation; possibly it may be ascribable o-continuous driving, coupled with the hives fitting too —in other words, to a want of fresh air. I would recom- him giving it yet another trial the coming season, and s he may then kindly report progress. The way I go k is this: Selecting the middle of a fine day when the re very busily at work, I invert the stock, setting the hive upon it, both entrances being closed; and after an empty hive on the stand to attract the foragers, carry e to a table previously placed beneath the shade of a tree tle distance, a few warning taps all round to begin with, pause of a minute or two to allow the bees to fill them- and then with the open hands beat sharp and quick; r pause, and if the ascending hum is heard, the hive may ly raised slightly on the opposite side from where the ody of the bees is ascending. This admits the fresh air, ting the movement; and should a veil or bee-dress be t all at this point, it can then be thrown aside, as bees sting after the ascent has begun. The hive may be kept position and the beating renewed at short intervals, till few minutes the bees will be found to have vacated the hive; they are then set down on their old stand and by the perplexed foragers. Any stray bees lurking in the d stock can be swept out with a feather. By driving my hiefly at the end of the season, when there is little, and nty-four days after swarming, when there is no brood, perience is more limited of the difficulty Col. Newman of; still I have resorted to this mode at all seasons, and ver yet beat off in driving a hive. No doubt the Colonel t so far, that when there is a large quantity of brood ng, it is not so rapid or thorough from the tenacity with which the nurses cling to their charge. At such a time, however, unless forced by some strong compulsion, I prefer leaving my hives undisturbed.—A RENFREWSHIRE BEE-KEEPER.

WHAT THE BEE SAID.

A WEARY time we had last season—
St. Swithin rain'd beyond all reason;
And, though we toil'd from morn to night,
You found our stock of honey light.

Soon as the snow had disappear'd,
And the larks' gay song we heard;
Soon as from her icy bed
The snowdrop raised her drooping head;
Soon as the crocus flowers burst forth,
Like tongues of fire from out the earth;
We ventured forth on busy wing
To hail the first-born flowers of spring.
To the brooklet—sparkling bright—
First we take our airy flight,
Where yellow catkins, bright as gold,
Adorn the willow branches old;
And alder waves her tassels gay,
Scaring the speckl'd trout away;
The dog rose and the scented thorn
The brooklet's rugged banks adorn;
There the primrose, modest, mild,
At the sun's warm kisses smil'd,
Like an infant fondly press'd
To its mother's heaving breast.

Next to Shirehill's summit high,
Humming on our way, we fly;
Whose rugged sides, so steep and stern,
Are carpeted with graceful fern;
And whose head, so broad and round,
Is with stately timber crown'd.
Queen of the woods, the lady larch,
All robed in green in early March,
A tall and graceful lady she—
Bride of Scotland's dark fir tree;
A Bluebeard husband, stern, severe,
Scowling darkly all the year.
There the birch, with silver bark,
On which the lover carves his mark,
With its branches waving free,
Hides the wild anemone;
And the lime, with fragrant flowers,
Invites us to his shady bowers,—
Where bird and bee together sing
A hymn of praise to nature's King;
Whose command to bee and man
Is—Gather honey while you can.

Thus to live, we do our best:
And you, kind sir, must do the rest.
Hive us snug from pelting storm,
Then you'll have an early swarm:
Roof our house with warm straw-hackle—
Not broken pans, nor such vile tackle;
Protect us from the thieving mouse,
Nor let the moth invade our house;
Nor snail, nor earwig—crawling creatures!
Nor spider, with his ugly features,
With hairy legs and goggle eyes,
Ensnaring us like vulgar flies.
Beware the tomtit—cunning fellow!
The soldier-wasp, all streaked with yellow;
Bad-conduct stripes they sure must be,
For ne'er a goodly act did he!
From foes like these protect our store,
And may you prosper evermore.

HONEY HARVEST IN AUSTRALIA.

LARGE AND SMALL HIVES.

MR. JAMES DICKINSON, writing in the *Melbourne Argus*, says "For nearly half a century I have made the habits and management of the honey bee my study, and experience has convinced me that for economical purposes the use of a small hive is the most profitable—a conclusion which has the support of most writers upon this subject, but at variance with the opinions entertained in this part of the country, where large hives are almost universally used. I give the following facts illustrative of my theory:—

"On the 20th of October last I procured a swarm of bees which had been cast that day; this we will call No. 1. On the 13th of December it cast a swarm, No. 2; December 23 it swarmed again, No. 3; December 26, again, which swarm I lost, a neighbour being the fortunate recipient, No. 4. January 13 No. 2 swarmed, No. 5. February 20, No. 3 cast a swarm, which escaped to the bush, No. 6. March 5, No. 3 swarmed again, No. 7; March 14, No. 2 swarmed again, No. 8; and on the same day No. 5 swarmed, No. 9. February 14, I deprived No. 1 of 27 lbs. of honey. March 20, took 28 lbs. from No. 2, and the same day 25 lbs. from No. 5. March 26, deprived No. 3 of 24 lbs. April 10, No. 5 again of 26 lbs.; and lastly, on April 22, No. 8 of 20 lbs. March 20, Nos. 2 and 5 joined in one hive after deprivation; and on the 26th Nos. 1 and 3 did the same. To sum up: in six months I have procured 150 lbs. of honey and five good, strong, healthy hives of bees, with which to commence another season, from one swarm, besides having lost two swarms. I think the advocates for large hives cannot adduce a greater remuneration than this. The boxes I use are 9 inches by 10, by 15 inches; contents 1350 inches. The common gin-case is the smallest in general use here (I have seen hives three times this size), containing 2880 inches. Amazing as the fecundity of the queen bee is, she seldom has sufficient progeny whose united labours can fill this space in one season.

"In conclusion, I may state that the domestic bees which have escaped since their introduction are now so very numerous in and around the Plenty Rangers, that a couple of active, energetic 'bee-hunters' would be amply remunerated by following that vocation for three or four months each summer."

[Results such as are above described can, of course, only be obtained in an extraordinary honey-producing country: 1350 cubic inches is considered a full-sized bee-box in England. Bar-hives, 13 inches square by 9 inches deep (which is the extra size used by Mr. Woodbury for Ligurians), contain only 1394 cubic inches, after deducting the space occupied by comb-bars.]

How Far do Bees Fly?—The question is frequently asked, "How far do bees fly in search of honey?" There are instances in which they go three or four miles, when the weather is warm and no winds exist to obstruct their flight; but the average range of a family is in a radius of about three miles diameter. If we could place a hive of bees in the centre of a desert or sandy plain, three miles in diameter, I do not think that they would be able to gather honey enough to survive, even if a great supply were to exist at the usual season, on the immediate borders of the said plain.—(*Genesee Farmer.*)

VARIETIES.

English Wine.—The Romans introduced the Vine into Britain, and on their departure the ecclesiastics became the cultivators of the Grape and the manufacturers of wine. The great barons also made much wine for their own use. The Duke of Norfolk had a large vineyard at Arundel Castle, and had at one time sixty pipes of excellent burgundy in his cellar. Warner, the introducer of the Black Hamburgh Grape, made wine from his vineyard at Rotherhithe. Rocque did the same at Walham Green. The last vineyard in England was that at Painshill, in Surrey, where we have seen the remains of the roots of the plants striving unsuccessfully to send up slender shoots under the grove of Scots Pines which now flourish on the spot, near to where the Portsmouth road is cut through the hill. After the death of the proprietor (the Hon. Charles Hamilton), a large sale of burgundy, claret, and champagne took place, and realised high prices, these wines being considered so excellent as to equal those of France, and this so recent as the latter end of the last century. Wine was made in all the monastic establishments upon a large scale, teetotalism being unknown to the ghostly fathers. Nevertheless wine was imported from France, to a considerable extent, at a very early period. At the installation of the Archbishop of York, in the reign of Edward IV., one hundred tuns of wine were drunk on the occasion. His predecessor is said to have used eighty tuns of claret yearly in his own house. Amongst the Barons there was no stint; the consumption of the Earl of Shrewsbury's establishment exceeded two tuns per month, and from the Northumberland household-book we learn that although the greatest economy was practised, the consumption was forty-two hogsheads per annum, perhaps ten times the quantity now used in the establishment of the head of the house of Percy.—(*Scottish Farmer.*)

Novel Use for Beet Root.—We have had brought under our notice this week a novel and by no means inelegant or uninteresting plan for blooming Hyacinths. It is simply this:—A transverse section of about 3 inches or so of the upper portion of a Beet root is taken off with the crown attached; where cut, it is hollowed or scooped out sufficiently to hold a Hyacinth bulb; it is then suspended by a string of narrow coloured tape. The Hyacinth grows as in a glass, but in this case the stand grows also. As the Hyacinth progresses, so do the leaf-buds in the inverted crown of the Beet, and the little leaves of the brightest and most intense crimson, curve upwards closely round the root, contrasting prettily now with the green of the daily developing leaves, and by-and-by with the blue, red, or white of the Hyacinth when in flower. Altogether the idea is a capital one, and the effect pretty and striking, as any one may observe who passing through Westmoreland Street will stop and look in at the window of Messrs. Toole and Company, where those cheap and pretty *jardinieres* may be seen.—(*Dublin Agricultural Review.*)

The Cocoa-nut Tree.—A paper on this majestic tree and its uses, read by Dr. Hugh Cleghorn at a meeting of the Edinburgh Botanical Society appears in the Edinburgh "New Philosophical Journal." We give a few notes:—The genus Cocos, by far the most important of the Palm tribe, contains twelve species, of which the Cocoa-nut tree (Cocos nucifera of Linnæus) is the most valuable. There are many varieties, five being indigenous to Ceylon. It is found all over the tropical parts of the world, growing from 60 feet to 80 feet high. Its fruitfulness varies with the soil, and it seems partial to the seashore. Possessed of a habitation darkened by a clump of Cocoa-nuts, a Jak, and a Palmyra tree, a native of India is considered a landed proprietor. George Herbert truly says:—

> "The Indian nut alone
> Is clothing, meat and trencher, drink and can,
> Boat, cable, sail, mast, needle—all in one."

The leaves are serviceable also for thatch, screens, baskets, and mats; the fibrous coating of the fruit forms a rope, and is used for stuffing mattresses; and the kernel furnishes a rich, clear oil. The tree is propagated by nuts, which, when planted thoroughly ripe about May, come up usually about November. The first leaf is single, and the plant is transplanted before it divides. The tree begins to bear in seven years; in fifteen years is in full bearing, producing about sixty or seventy nuts, and continues bearing from seventy to eighty years. Dr. Cleghorn describes the mode of extracting the toddy, and gives engravings showing a native equipped for the ascent, his apparatus, &c. When the spathe of the tree is ready to yield toddy may be known easily, by the chattering of birds, the crowding of insects, the dropping of the juice, and other unmistakeable signs. In 1858, 2,508,869 Cocoa-nuts were imported into the United Kingdom, and were almost all retained for home consumption. They are used instead of wedges to fill up the interstices between casks and packages in the cargoes of ships, so that the freight costs little. In the same year our imports of Cocoa-nut oil amounted to 197,788 cwt.

Couch-grass as a Remedy, and as Food.—An infusion of the Triticum repens, Couch-grass, in the proportion of one ounce of the dried and cut stem to a pint of water, and given in the course of the day, has been found by Mr. H. Thompson, of the University Hospital, to be very beneficial in irritable conditions of the bladder. According to him, it is important that the plant should be gathered in the spring, shortly before the leaves appear; the stem is then to be slowly dried without artificial heat, and cut into the requisite lengths for use. Professor Burnett, speaking of this grass, says, "The Couch-grass of the farmers, which is here regarded as a noisome weed, is collected on the Continent as food for horses. Cattle of all kinds are fond of the underground shoots of this plant, which are sweet and wholesome. Sir Humphry Davy found them to contain nearly three times as much nutritious matter as the stalks and leaves; and it has been stated, on the authority of a French veterinary surgeon, that exhausted and worn-out horses are very speedily restored to strength and condition by giving them daily one or two bundles of Couch-grass, of 10 lbs. or 12 lbs. weight each, mixed with Carrots.—(*Dublin Agricultural Review.*)

OUR LETTER BOX.

Metallic Substance in Coal (*S. W.*).—It is merely iron pyrites, sulphuret of iron, and where it abounds it has been employed for making green vitriol, sulphate of iron.

A French Receipt for Tracing Outlines of either oil paintings, prints, or pencil drawings, without any injury to them, upon any kind of paper which does not lose its colour after the process, appeared in the [illegible] newspaper some time since. It was by some preparation of benzoin. The paragraph has been lost, and the writer of this would be most thankful to get the receipt again.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	MARCH 4—10, 1862.	Weather near London in 1861.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
4	Tu	Shrove Tuesday.	30.184—29.060	49—28	N.W.	—	41 af 6	43 af 5	32 10	4	11 57	63
5	W	Lent begins. Ash Wednesday.	30.225—30.003	51—38	S.W.	—	39 6	45 5	40 11	5	11 44	64
6	Th	Baurea rubra.	20.901—29.606	55—37	S.W.	.05	37 6	46 5	morn.	6	11 30	65
7	F	Boronia pinnata.	30.094—29.976	54—41	N.W.	—	35 6	48 5	44 0	7	11 15	66
8	S	Bossiæa rotundifolia.	30.069—29.978	59—29	W.	—	33 6	50 5	41 1	☽	11 0	67
9	Sun	1 Sunday in Lent.	30.372—30.252	50—32	W.	—	30 6	51 5	34 2	9	10 45	68
10	M	Callistemon phœniceum.	29.970—29.701	56—32	S.W.	·10	28 6	53 5	16 3	10	10 30	69

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 49.1° and 31.7° respectively. The greatest heat, 68°, occurred on the 9th in 1828; and the lowest cold, 7°, on the 10th in 1847. During the period 165 days were fine, and on 80 rain fell.

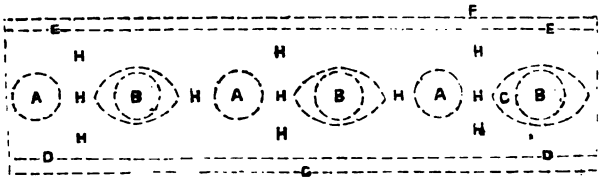
THE PANELLING SYSTEM OF PLANTING LONG FLOWER-BORDERS.

AS your valuable Journal has long been the leading and most able expositor of all matters connected with modern flower gardening, I have thought that a few lines illustrative of a system which I have carried out here for several years in planting long borders might prove interesting to some of your readers. The effect produced by what is now very generally known in Scotland as the panel system of planting, is admitted to be much more striking in many situations than ribboning. However the merits of this style of planting may be estimated comparatively, it can never fail to form a most pleasing variety when well executed; and where long and wide borders form a prominent feature, it is especially suitable. The striking effect and variety of design which can be produced with comparatively few varieties of plants by panel planting are not easily brought out by any other system that I am acquainted with.

Probably the easiest and most simple way of conveying in words a correct idea of this mode of decoration will be to name the material with which a few of our most telling borders have been planted, and state the exact order in which the operation of planting was carried out.

1st (A border 17 feet wide). A line was stretched along the centre of the border, and at every 14 feet a stake was fixed in the ground, and from each stake, with a radius of 3 feet, a circle was described. On every alternate circle, 6 feet in diameter, a mound of earth was raised to the height of 3 feet above the ground level, and tapering to a diameter of 2 feet at the top. Into the centre of the mound a socket for a vase was fixed, and on this socket a vase placed, and filled with soil. A large specimen of Rollisson's Unique Geranium was planted into every vase, and staked into a pyramid. The mounds of earth were then planted with Tom Thumb Geraniums, and the surface of the earth paved over with round blue bullets from the sea-beach, to prevent heavy rains from washing down the soil, and drought from drying it rapidly, while the water, passing through the vases and sockets, kept the centre of the mounds where the roots penetrated safe against the trials of a dry season. Every alternate circle was then planted on the flat with yellow Calceolarea. Round this circle of yellow was planted an oval of Purple King Verbena—the oval stretching along the border, and intended to give weight to the purple in passing the eye along the border. A single line of Purple King Verbena was next planted along the front a foot from the Box, and another line in the same position at the back of the border. The whole vacant spaces between each circle and mound and between these two margin lines of purple were filled up with Mangles' Variegated Geranium, giving a groundwork of pink flowers and variegated foliage, with mounds of scarlet tipped with purple, alternating with flat panels of yellow surrounded with ovals of purple, to prevent the yellow and pink from neutralising one another. The whole margined with a single line of purple, the back row being of Humea elegans, alternating with white Dahlia Alba Floribunda; the bronzy waves of Humea bringing out the white Dahlia, and the Dahlia bringing out well the line of purple.

The following sketch, if it be worth inserting, will show at a glance the above arrangement.



A Mound of Tom Thumb Geranium, surmounted with a pyramid of Rollisson's Unique Geranium.
B Circle of yellow Calceolaria, surrounded with oval of Purple King Verbena, C.
D and E Lines of Purple King Verbena.
F Back row of Humea elegans and dwarf white Dahlia alternately.
G Box-edging.
H Groundwork of Mangles' Variegated Geranium.

2nd, In 1860 the preceding border was planted with Tom Thumb for groundwork, with alternate panels, on the flat, of yellow Calceolaria and Purple King; each panel of yellow having a large specimen of Humea elegans in its centre; margin lines were of Variegated Geraniums; the back line of all being of Hollyhocks, 18 inches apart, trained with a single stem, and topped to the same height. This was a most telling border.

3rd, Two borders, in 1859, with groundwork of Verbena venosa. Alternate panels of yellow Calceolaria and Scarlet Geranium—front margin line Variegated Alyssum; back margin of Cineraria maritima, backed up with Prince Arthur Dahlia. This was very effective.

4th, Groundwork of Variegated Alyssum, with alternate panels of Purple Verbena and Brilliant Geranium. Margin lines of blue Lobelia.

5th, Groundwork of blue Lobelia speciosa, with mounds of Scarlet Geranium alternating with panels, on the flat, of Golden Chain. Margin lines Cerastium tomentosum.

6th, Groundwork of Lobelia speciosa, with panels of Mangles' Variegated Geranium and Brilliant alternately. In the centre of each panel of Mangles' Geranium was a neat slender specimen of Irish Yew about the size of a gentleman's umbrella, and round which the Geranium was trained cone-shaped to within 18 inches of the top of the Yew. Margin lines of Golden Chain. This was very much admired by the ladies.

7th, Groundwork of Purple King Verbena, with panels of yellow Calceolaria and Scarlet Geranium alternately. In the centre of yellow, a very small neat Irish Yew. Margin lines, Flower of the Day Geranium. On getting the first sight of this border a lady exclaimed, "Surely the hand of an enchanter has been here!"

8th, Groundwork of Lobelia speciosa, with alternate panels of Centaurea ragusina (a glorious plant) and Brilliant Geranium. In the centre of each panel of Centaurea an Irish Yew about 2½ feet high. Margin lines of Golden Chain.

9th, Groundwork of Brilliant Geranium, with panels of Perilla and yellow Calceolaria; with margins of Alyssum, with backing of Tritoma uvaria.

The above will serve as examples of this style of planting. To bring out the system well it requires a long and wide border. Here there are five borders particularly suitable for it, the narrowest being 12 feet wide, in which the panels are 4 feet in diameter. My own favourite border is that first described. No. 5 was also particularly fine. No. 6 looked particularly well viewed from an elevated position, and the panels looked like something set upon a polished surface framed in gold: probably this was the most chaste. No. 4 was characterised by "unassuming loveliness."

The method which I adopt with Cerastium tomentosum when used for long marginal lines may probably be useful to some of your readers. In March, small cuttings are taken and dibbed in (without being made into cuttings in the usual way) about 3 inches apart along the line, leaving just the points of the bits above the ground. When the line is lifted the row of cuttings looks just like a chalk mark. They are watered, and in a short time they root, and begin to grow; and, managed thus, they make the most uniform and beautiful lines I have ever seen of it, and will grow to 2 feet wide, if allowed, by the middle of July.—D. THOMSON, *Archerfield Gardens*.

USE OF HUMUS IN A SOIL—CAUSE OF VARIEGATED LEAVES.

If you do not recollect one of the ideas which led to the discussion on the disease or no disease of variegated plants last summer, you will not profit so much as you ought from the application which must be made, sooner or later, of the present rising of the sap by the forces of vitality and warmth, or rather of the discussion anent that movement.

The "OLD SHOWMAN," whose views led to that passage of arms said, among other things, that the cause of the convertibility of green leaves to variegated foliage by manual process, might be owing to the decomposition of water or some chemical process like it, and one of those who took part in the discussion seemed to doubt the possibility of plants, or the roots of plants, being able to decompose water.

My copy of the Journal is in the hands of the bookbinder, so that I must write from memory; but I well recollect the impression made on my mind from the doubt thus cast by a practical observer on one of the clearest points in the chemistry of vegetables. Also that a clear knowledge of the effect of the decomposition of water on the vegetable fibre would, or should, have led the "OLD SHOWMAN" to exactly the opposite conclusion.

As long as the now-exploded doctrine of humus and humic acid held sway, and more particularly since Sir Humphry Davy lent the weight of his powerful authority to it, you could not wonder that some men might be led away with such crude ideas of vegetable chemistry as that humic acid, as it was termed, might change green to white or white to green, or all the colour of all the leaves to the most intense green when properly applied, or might be so administered as to do just the reverse; for at the time alluded to, men's minds in our calling were bent, as it were, on the reality of the power of humus to effect any result which a gardener wished, if he only used it in the particular way for that very purpose. And one of the ways might certainly be to convert a green leaf to the variegated form—say by some application or preparation with the acid of humus. But the fact has been clearly proved and explained; first by Edwards and Colin in 1838, and lastly by Liebig himself, that water is decomposed by the roots and parts of plants, and that without the decomposition of water all the humus in all the gardens is of no more use to plants than gunpowder and shot; in short, that the roots of plants have no power at all to get the goodness, or any good, out of humus unless water is decomposed.

Now, to explain as we go. Humus is the black remains of all leaf, vegetable, or animal matter, after the smell is all gone and the fibre and substance reduced to mould or powder. It is this humus which makes so much of the cultivated lands look black, or like black mould; and this humus was, till recently, believed by all gardeners to have been the very life and soul of the food of plants, either as the cream of all vegetable mould, or as dissolved in water like so much guano. It is now, however, a clear point that all this was entirely a practical mistake—that neither in solution nor in the solid form can humus be of more use to plants than pebbles from the seashore.

So you see we were all of us wrong, not only on the power and action of roots, but of how they fed on what we gave them. Yet our practice all the while was quite true, so to speak. We said, in effect, that the very great difference between the healthy looks of plants luxuriating in humus, or the essence of black mould, and those on ground in which little or no humus existed, were so manifest as to require no arguments to prove this. "Very good," says chemistry, "you gardeners are good fellows, and choose good ground for what you do; but you are out of the ground altogether in explaining the goodness of humus. As you see it, or as you apply it, dry and wet, or soluble, as you take it to be it is, and cannot possibly be of the smallest use to any plant under the sun." This was worse than a thunderbolt to all our pride of "principles." "Why, you old chemical quack," we retorted, "some of us know more of humics and humic action than is known yet in your crucibles; we can even change the colour of the leaves with humic acid, and that is more than most chemists have ever thought of hitherto, let alone the aspiring to do the deed as we can."

So far for the explanation of what humus is, and what it has been thought to do for us gardeners. Now, let me explain next what is meant by decomposition of water; for unless young people and old folks know the meaning of the words we make use of, how can they get at the meaning of what we write and say? What is more common from our pens and tongues than the word compost—so much sand, such a quantity of leaf mould, and a certain proportion of peat and loam—these put together make a compost. Now, suppose you wanted to undo this compost, to get out all the sand by itself, the leaf mould without peat or common mould with it, and the peat freely separated from the loam. No gardener could do that you know, but chemistry could do it; and the old man would tell you after it was done that he merely decomposed your compost. You composed it and he decomposed it, or undid it into the separate parts of which you made it. But what has that to do with the decomposition of water, and the watery looks of variegated leaves? Why, you must know that water is not a simple drink after all, as they say it is, more than tea or coffee. But let us take the coffee to explain it by. There are the water, the milk, and the dark brown, or the humus of the coffee as one might say, all mixed, and that is coffee composed of the three things—a liquid compost in fact—who can decompose it, or get out the sugar, the coffee brown, and the water, each to be clear of the other two? You or I could not do it; but chemistry could, and would call it decomposing coffee.

Well, pure water is composed of two things and half a thing, but say two things, as sugar and water were in the coffee; and the roots of plants were but recently discovered to have the chemical power to decompose water, just as the chemist decomposed the compost or the coffee; and one of the parts of which water is composed would be poison to us without the other part; and it is this poisonous part (Hydrogen) which humus supplies to the soil and to the water in the soil on which roots feed; and the roots, after decomposing the black water of or from the humus, take only the feeding part out of that which would be poison to us; the other part is let off free as far as roots are concerned.

This hydrogen, or portion of water poisonous to animals, it is from which some of the products of plants are exclusively obtained—as indiarubber, gutta percha, wax, and volatile oils; besides being one of the great elements from which the wood of plants is made by the leaves, and leaves make the rest of the wood from another kind of poisonous matter floating in the air and which is in reality part of it, so that the heartwood of the Oak, is, by the most mysterious process of Nature, made by the roots and leaves of plants from sheer stinks and smells, which no one can see or feel, and which would annihilate the whole of the animal kingdom were it not kept within due bounds by the requirements of the vegetable kingdom.

Now, what could the decomposition of water give out to the roots of Geraniums to cause the leaves to become variegated?

Liebig says the decomposition of water is necessary only to make plants healthy; and some of us imagine variegation is an unhealthy condition, so that that condition cannot be ascribed to that natural process by which the roots of plants decompose water.

But there is another point—an old one it is true, on which Liebig lays the force of his approbation, but with which I totally disagree—I mean the notion that because plants are known to feed they must necessarily excrete refuse matter as animals do. Animals do, certainly; for you cannot conceive such a thing as food without some refuse; but plants do not feed as animals do, neither can they evacuate refuse as we do—at least, not by imparting to the soil their excrements through their roots.

The leaf is the only organ in the vegetable kingdom through which the refuse of the food of a plant can by any possibility pass out of the system, and as long as there is a sufficient leaf action for that process, it is constantly going on. But there may be a thousand things, at times, to hinder the leaf from going thoroughly through the process of giving off the whole of the excrements, and one thing out of that thousand will cause some derangement in the leaf. The leaf imparts the consequence of its derangement, so to speak, to the parts which it is its office more immediately to feed and increase; that consequence may be one thing, or one affection, at one time, according to the time of the season, and another thing at a later or earlier period. In one of the stages of the affection caused by some hitch in the stomach, the leaf itself being that organ in plants, it transmits, or the leaf imparts, the affection to the next generation through its power in providing the proper food for the seed; but in this instance the food is not quite so proper to the seed as it should be through that affection in the leaf. The consequence is, the seedling from that seed so affected will not come so true to the kind as if it had been fed by a healthy or more healthy leaf or leaves. The consequence is, a seedling possessing features differing from the type, and one of the features may be a more soft and succulent leaf, or it may be a variegated leaf.

There is nothing known to me from which I could conscientiously infer variegation in leaves or parts of plants to arise, except through some such process affecting the seed in the first instance. All the turns that all plants take are, no doubt, referable to some chemical process, and so is this of variegation. But all the chemistry in the world is not sufficient of itself to make a single leaf or a blade of grass, or alter the form or colour of a leaf in such a manner as can be transmitted through successive generations of propagation, so to speak. I fully admit, figuratively, that new plants are created every year of our lives by the agency of man, but I cannot conceive such a power as would, or could, alter any plant or leaf from the state it was in on coming into existence.

The real cause of variegation none of us know, and those who assume a knowledge of it by referring it to some state of disease, do so merely to avoid a very difficult problem. It may be from some diseased condition, but evidences are quite as numerous and as strong against that view of the question as in favour of it. All that I hold is, that sports in this form are not the result of accident, and that you cannot imitate them by manual process; also, that it is not the diseased condition of the parents that is so transmitted, for the most healthy parents in the garden are just as liable to have a variegated offspring as those in the last stages of decay. Then, if variegation cannot be made by man or come into being but by seed, it must be caused as many maintain with me, through some chemical change that is unusual in the food of the parent plants, or in their own organs when converting all that is foul and filthy under them and above them into the products of their own kingdom.

In conclusion, my last experiment is more puzzling to me than most I have had in hand on variegation. In 1859 and in 1860-61, I planted twelve of the healthiest plants I had of the Crystal Palace Scarlet Geranium in the same spots and the very same soil. I had so many flowers of the best truss of each plant dusted with the pollen of one of my strong healthy seedlings with plain green leaves. All the seedlings from them in 1859-60 were as plain and as green as those of the parents; but from last season I have now hardly a seedling of the very same cross, and under exactly similar circumstances, with a clear green leaf free from white specks and blotches. Whatever may have been the cause, it affected twelve plants just alike.

D. Beaton.

RESTORING VARIEGATION IN A LAUREL.

Is there any method of causing the variegated Laurel (which is inclined to turn green) to recover its variegation? The shrub from which the enclosed leaves were taken was some years ago beautifully variegated, but is now chiefly green.

[To preserve variegation in common Laurels, the same rule as for promoting fruitfulness in fruit trees should be applied. If a Pear, or a Peach, or a variegated Laurel is highly fed, the high feeding tends too much to the increase of the growth for fruitfulness or for variegation. The leaves of your Laurel are yet very beautiful, and if you were to transplant it this spring and put it into a poorer soil, and more in the shade, they would very likely become more fully variegated than before.]

SCHEDULE OF THE ROYAL HORTICULTURAL SOCIETY, 1862.

It seems a very ungracious thing, when a friend has exhausted his ingenuity in setting before you and your friends an entertainment which he imagines is perfect in all its parts, to suggest that he has forgotten the orange biscuits with the dessert, or that there was more than a *soupçon* of Onions in the *omelette aux fines herbes*; and yet one finds oneself just in that position with the schedule of the Royal Horticultural Society.

It is hard not to express unqualified praise when the various courses, beginning with the minor shows on to the great Gourd and Saturnalia, are so liberally set out—when the sum total of the prizes offered is £2146—when fresh-water aquaria, and window-boxes, and wax Turnips, and anything that can add variety to the exhibition or be pressed into the service (much in the same way that I recollect a medical book society thought it enough, if a book were written by a medical man, to include it in its lists), receive prizes—yet as a friend to its welfare and desirous of its efficiency, I cannot give it unqualified praise; and in the grumbling remarks that I now make I am not only expressing my own sentiments, but those of many practical men. And when as a florist I object to the manner in which we have been slighted, I do not intend to suppose that there was any deliberate attempt to "snub" us.

I must suppose that the Council, and the Exhibition Committee, and the Secretary, are all honourable men desirous of accommodating all parties, and that what we have to complain of arises rather from underrating the value of the flowers which we especially consider worthy of their notice. But I beg to submit a few reasons to show that our complaints are well grounded.

The exclusion of a large number of florists' flowers from the schedule of 1861 attracted the attention of several members of the Floral Committee; and a resolution was passed and forwarded to the Council, naming the omissions, and suggesting their insertion in that for 1862. A courteous reply was returned, saying they must be considered in the schedule for 1862. But there was a hitch somewhere: either it was not reported in the proper quarter, or else it was forgotten, or else ——. However, it is not worth while suggesting any more reasons, but there is the simple fact.

Now, when the Floral Committee, composed as it is supposed to be of the most practical men that can be got together, unanimously records its opinion, surely the least they can expect is that due attention be paid to their recommendations. I am not disposed to call it, as some did, "quiet insolence;" but the very strong feeling that such an expression indicates, combined with that which I also heard—"we shall have to resign *en masse!*" shows that there is a leaven at work in a body, let us remember, composed of gentlemen who give their time and labours gratuitously, which it will hardly be well to disregard.

Secondly. It must be recollected that the more popular direction given to the management of the Horticultural Society led to the abandonment of the National Floricultural, the National Rose and Pomological Societies, and that therefore it would be naturally expected that those subjects which were their especial province should be thoroughly provided for. As a general rule they are; but there seems an arbitrariness in the selection of some and the rejection of others which is unaccountable. Why should Tulips be placed in the schedule in May, and Pinks be excluded in June? Why should Carnations and Picotees (which Dr. Lindley prefers to the Dahlia) be absent from the July Show, and £52 given to foliaged plants, including the Caladiums and Begonias? It may put money into the pocket of some "eminent nurserymen," and fill up a large space; but these are not reasons sufficient to satisfy questioners upon the point.

Thirdly. I fearlessly appeal to the general interest that they excite as in itself a sufficient reason for their being more considered than they are. I know they are the abomination of botanists; but we may be thankful that all lovers of flowers are not botanists, or we should be overwhelmed with all sorts of rubbish. But the question is, What do the public in general think of them? Why, I read a complaint the other day in one of the gardening papers, that people examined them so closely and stayed so long over them that the thoroughfare was obstructed. May I ask whether that was the case with the tree Ferns, or the Dracænas, or the Caladiums? I trow not. As a florist I may be, perhaps, too much inclined to look favourably on my pets; but I do believe that for one grower of tree Ferns there are a thousand growers of Roses and a hundred of Carnations and Picotees, and surely that which is the favourite in cultivation ought to be considered in an exhibition.

I know it may be said in answer to this, "We cannot take in everything. We have expended so much, and we must place a limit somewhere." Well, let it be so; but I think I have pointed out where a curtailment might have been made without any great harm. Why not have included the Begonias in the fine-foliaged plants? And surely it is as much within the province of the Royal Horticultural Society to encourage the production of a good stand of Pinks and Ranunculus as that of a wax Cabbage, or the arrangement of a fresh-water aquarium with its tadpoles and water-newts. Besides, I suppose £30 would cover pretty well the requirements we make; and it is hardly worth the Council's while for that sum to make grumblers of a large body of persons, especially as it arises from the non-carrying out of a proposition of which they have approved.

There are some other points about which, as the fit is on me, I may as well say a few words. Did not my friend Mr. Hole, in the most chivalrous manner, resign his laurels as the originator of the National Rose Show to the Horticultural Society? They acknowledged that last year; but not only this year do they omit all mention of his name, but they fix their show at the suggestion of one grower (my worthy friend the Vicar of Rushton), on the 26th of June, when northern growers will be unable to exhibit, unless the season be very different to what it has been—and as a result he is now endeavouring to organise a midland and northern show; and thus probably our hopes of a national Rose show will be centred in the Crystal Palace Company, who are wiser than to do such things. And why, may it be asked, when £138 for Roses are most liberally given on the 26th of June, is there not one single prize offered on the 2nd July, when they will be unquestionably in finer condition? Such things pass the comprehension of our philosophy.

Is it too late to say a word about the site of the exhibition? We had last year a taste of what the conservatory is—destructive to the well-being of cut flowers and very inconvenient. What it will be this year, with the large accession of visitors we may expect in London from the opening of the Great Exhibition, we hardly dare to think. But could not the exhibition be under canvass at the lower portion of the garden?

Some of the grievances thus complained of may be remedied, and I feel sure that whatever Mr. Eyles can do consistently with his position to forward our views he will; but he has not the power, although he may have the will. We must try and apply a little gentle pressure where such will most tell; and I feel sure that if two members of the Floral and Fruit Committees were added to the Exhibition Committee it would make matters right, and prevent these serious blunders in future.—D., *Deal.*

WORSLEY HALL, NEAR MANCHESTER.

THE SEAT OF THE EARL OF ELLESMERE.

EFFECTS OF THE SEVERE WINTER OF 1861.

Though the greater part of the extensive pleasure grounds at this place are elevated considerably above a flat district to the south, yet many evergreens suffered severely on the night of the ever-memorable 24th of December, 1860, more especially the common Laurels, which were all killed down to the ground. Mr. Davidson, the intelligent gardener, thought it advisable, however, to leave them standing to see whether they would shoot out again. I saw them on the 20th of February last, and observed that nearly all of them had this last summer shot out at the base strongly, some having made shoots 2 feet high. Men were at work sawing off the dead tops, which made excellent pea-rods. In two or three years they will be dense bushes again. The young shoots have not suffered at all from the frosts of this winter.

Portugal Laurels.—In the lower parts of the grounds these have some of the branches destroyed, but the living branches have grown well since. Others in more elevated positions have not a twig or a leaf injured. A long row of bushes 8 feet or 10 feet high, on a level below the far-famed flower garden are only partially injured, though growing on a strong clay. The lofty terraces above them, perhaps, have been a means of protecting them, and also the full exposure to the south has caused them to make short shoots early, the wood of which became solidified and well ripened before the severe frost set in.

Rhododendrons.—The pleasure grounds here are plentifully stocked with large specimens of this fine evergreen shrub. They are not injured in the least, though the greater part of them are hybrids of the Catawbiense class. This summer has been a favourable one for them, and the consequence is, they are almost universally well furnished with blossom-buds. They will make a splendid display this year.

Roses.—Some old standards and old sorts have stood the frosts well, but many, if not all, in the lower parts were killed. Even Roses on their own roots suffered severely, though they have pushed out strongly. There is a Rose garden in a very high position; all the shoots that were pegged down to the ground escaped, but such as were trained upright to a wire trellis all died down to the ground; but this summer most of them have made very strong shoots, which have completely clothed anew the trellis. The shoots are now alive to the very tips, and are as green and healthy as possible. In fact, some are nearly in leaf, so favoured are they this, comparatively speaking, mild winter.

Araucaria imbricata.—On each side of the long walk leading down the pleasure ground through an old wood to the kitchen garden, there was planted some eight or ten years ago a somewhat irregular avenue of Araucarias. They were planted on the level surface without any particular care, and have grown freely. The hard winter has affected them variously. Some that were fully exposed to the wind are I fear quite dead; others partially sheltered have some of their lower branches quite killed; others have during the past summer made some small growths, and many of their tops are green and healthy. I am glad, however, to record that there are a considerable number that have borne the battle with the frost and the breeze unscathed, the very lowest branches being quite green and healthy. Nearly all those that have escaped uninjured are surrounded with low Rhododendrons, which, as Mr. Davidson justly observed, have no doubt kept the frost from injuring the main stems, and also protected the roots in a great measure. It is evident there are some seedling plants of Araucaria that are more hardy than others.

Other Coniferous Trees.—Of these there are not many species growing here. I observed the Deodars were partially injured; Pinus austriaca has stood well, as also Pinus excelsa, and Pinus Cembra; Abies nigra, a fine specimen, quite safe; Wellingtonia gigantea—when Her Majesty our Gracious Queen visited Worsley two or three years ago, she planted as a commemoration of her visit, a fine specimen of this most magnificent denizen of California. It has grown well and stood the winters uninjured. From all that I have observed and heard, I am convinced that this fine timber tree is as hardy, if not hardier, than any other foreign evergreen coniferous tree ever imported into this country. Should this opinion be correct, the next generation may expect to be able to plant it largely for timber purposes with every prospect of success.

Irish Yews.—On the terraces adjoining the large flower garden this compact-growing tree has been planted rather numerously, partly for the purpose of breaking the uniform level, and partly to give a variety of colour. I observed several of the top shoots withered. This was accounted for on the ground of the thinness and poverty of the soil, and that this is the true reason is exemplified by some specimens that had been removed into a deep rich soil in the kitchen garden, and have there made strong healthy shoots to the highest points. A good watering occasionally with guano water would, I have no doubt, have a good effect on these Yews on the terraces.

As I remarked before in the pages of this Journal, there is a large sheet of water in the level below the flower garden. In the centre of this lake there is a large island, and on that island Mr. Davidson is busy now forming what will be a most extraordinary subterraneous grotto of a circular form, with many winding covered entrances through rockwork to it. It is so contrived that open spaces facing the water form half-circular seats. These in a hot summer day will be, after a long walk, very cool, pleasant, refreshing, resting-places. In other parts of the lake, on the land side, there are formed a kind of grottoes for the water fowls to enter and breed in and rear their young.

Directly facing the central large grotto, the Earl has had a long avenue cut through the ancient wood to the walk before referred to, as connecting the pleasure ground and the kitchen gardens. A gravel walk is being formed through this avenue, and large evergreens—such as Yews, Rhododendrons, tree Box, &c., planted on each side. Standing at the end next the connecting-walk, the long vista through the forest terminating with the lake, and across it the grotto will be seen. When completed this will be a very interesting and beautiful view. These extensive alterations employ a considerable number of hands, which is one of the blessings that a wealthy nobleman has in his power to bestow upon the needy poor, and no one is more ready to make this judicious use of his abundance than the owner of this fine place. To give a poor man labour is far better than to give him charity; the former renders him in a measure independent and happy; the latter, idle, careless, and miserable.

From the pleasure ground I transferred myself to the extensive kitchen gardens. Here every part is in a state of progress. Pine Apples in their various stages, some ripe, others swelling, some fruits just peeping up through the leaves. Succession plants advancing and being potted, and the nursing stock healthy. The whole with not an insect on them that I could spy out. Cucumbers bearing, Mushrooms springing up abundantly, Vines the first crop as large as peas, Peaches just setting, and others coming into blossom. Out of doors, showing how warm the weather has been, I observed Apricot blossoms very nearly expanded, although Errington's idea of retarding had been practised by keeping the trees a distance from the walls. Pears and Apples this year are well set with blossom-buds—a rather unusual thing in this moist climate and low situation.

Here I observed a novel kind of shelter for Roses and other half-hardy things. It is, in fact, a tent in the form of a half span-roof, covered with Brittain's threefold cotton-netting. Mr. Davidson speaks very favourably of it. I noted the Rose trees were looking well and in full leaf. Strawberry plants in pots were growing, and Chrysanthemums progressing almost too fast. The half-hardy Pentstemons are kept under it, and were as fresh and lively as if it were September instead of February. Many species of British and exotic hardy Ferns are in this net house and are very healthy. I do think a house of this kind, covered with this kind of net which is strong and lasting, would be a useful adjunct in every garden.

The stock of bedding-out plants here is really enormous, and the whole are looking remarkably fresh and green. I wish those who doubt the fitness of Gazania splendens saw the immense lot of it grown here. Last summer it bloomed most profusely and was generally admired. I must, however, conclude these few brief desultory remarks on the gardens at Worsley, as my allotted space is full; but I may have more to say about other matters connected with the flower garden at a future opportunity. —T. Appleby.

HOW TO TREAT VARIEGATED BEGONIAS.

In the latter part of March turn the plants out of their pots, shake most of the old soil off, and cut away all unsightly leaves from them. Pot them into clean, well-crocked pots as small as you can get them into comfortably. The soil to use is a mixture of one part of strong fibrous loam, peat one part, silver sand one part, and a little charcoal broken rather small.

After potting plunge them into a sweet bottom heat of about 70°, keeping them close for a few days. They must be kept shaded from the sun, as its rays soon burn the leaves.

About the middle of April they will have filled the pots with roots, if all has gone on right. Then mix a compost for them as before, with an addition of a little rotten dung about one part. Warm it in one of the houses or elsewhere, so that the plants may receive no check from potting. Then place them back again for a fortnight; from thence take them into the stove. By that time they will begin to look well, and will make handsome plants.

At the beginning of June they will bear the temperature and light of the conservatory, if they are shaded, and may remain there for about two months, excepting some of the very tender sorts, these I keep in the stove. Towards October they will not want so much water, give them only just enough to keep them from flagging; thin; place them then in the coolest end of the house. They will require but very little water in the winter months.—A Constant Subscriber.

[We shall be very glad to hear from you again as you obligingly offer.—Eds. J. of H.]

NOTES ON VEGETABLE CULTIVATION.

(*Continued from page* 433.)

Beans, Scarlet Runners and Dwarf Kidney.—The latter class presents a greater variety, but they may easily be reduced. The Early Dun, Liver-coloured, and Negro for general crop, and the Mohawk for forcing will be found to answer very well; but other names might represent these and answer the same end. Natives of a warmer climate, they like a warm dry soil, and must not be planted too soon. The middle of April is soon enough in a general way in most places about London, and a little later than that in cold late places; and occasional sowing up to the end of June will carry on the succession. This useful vegetable also forces better than anything I know of, and may be had at all times where there is accommodation to force it. Here we have had a supply since the middle of December by sowing four or five Beans in a three-inch pot in heat, and after these are up with two rough leaves they are transferred to an eight-inch pot, the ball being broken a little to allow the plants to spread; small twigs support the tender growth, and, being near the glass they bear well. In the open ground they ought to have a sunny exposed place, and they will amply reward any care that may be taken of them. The Scarlet Runners are more robust, and at the same time more prolific, continuing bearing until frost puts an end to their existence; and, as a cottage plant, it is second to few for general usefulness. The first week in May is soon enough to sow the first batch, and they may be sown from then to the middle of June; but the bearing properties of the plant are such that it very often happens the first rows continue in bearing to the last; slender poles about 8 feet or 9 feet high are best for them, and the rows ought to be at least 6 feet apart. The bearing properties of the plant are much enhanced by not allowing any pods to remain on to ripen; in other respects the plant requires no particular attention after it is once started to climb the poles.

Broccoli.—This extensive family deserves more than a passing notice, as it forms such an important item in the general bill of fare; heads of Broccoli in one form or another being expected all the year when Cauliflower falls short—in fact, the two vegetables approach so near each other in appearance and utility that the distinction between them is difficult to explain, and some of the varieties of Broccoli resembling Cauliflower are often cultivated for summer use; indeed I have heard an experienced gardener say that he has cut Walcheren Broccoli all the year round. Be this as it may, certain it is that in mild seasons the winter supply of this useful product is more plentiful and regular than in severe winters—in fact, except in a few favoured localities it cannot be had with a certainty all the year round; the best situation for it is near the coast, and especially that part where there is least frost, as the south and south-western coast. The names given to some varieties plainly indicate the favoured spots of its growth, Penzance and Portsmouth, the frosts being less severe on the coasts; and this vegetable not objecting to the occasional saline spray that finds its way inland some little distance during a storm, it is made to thrive and grow at times when similar plants in the interior are killed outright by the severe frost. But, as the choice of such situations is confined to a few, the ordinary cultivation inland will be treated of.

For distinction it is better to divide the Broccoli family into classes. No. 1 being for autumn and early winter, it might consist of Early Purple and White Cape, with one or two others as Imperial. No. 2 is supposed for midwinter use, and may consist of Walcheren, Snow's Winter, White Sprouting, Knight's Protecting, and one or two others. No. 3 being the late spring kinds, represented by the Portsmouth a large kind, Wilcove an intermediate variety, and the small dwarf varieties called

Miller's Dwarf or Russian; the latter being smaller may be planted closer, they are very hardy, but they all come in together. There are several other varieties in this section, as the Brimstone, Emperor, Incomparable, and others; but they differ but little from each other. A late purple is, however, useful, and in sowing it is better to have small varieties in order that if one fail another may come on; this is more especially advisable when the seed cannot be depended on. Sow the late kinds about the third week in April; but the Early Cape need not be sown until the 1st of June; the Walcheren and Snow's Winter about midway between these two periods. If the weather be dry cover the seed-beds with boughs or something of that kind to shade them a little, taking care that the birds do not carry the seeds away, which they are fond of doing; plant out as occasions offer. Generally this crop is made to succeed some other, as early Potatoes, Peas, or such like, and the young plants are sometimes planted between rows of Peas while the latter are standing. Where ground is scarce this is excusable and recommendable, taking care in gathering the Peas not to injure the Broccoli plants. About 2 feet apart each way will do for the Cape and medium-sized growing kinds; but the Southampton and large spring varieties may be wider, while Miller's Dwarf may be closer. The same place as recommended for Borecole, planting in shallow drills, is advised for this plant, and earthing-up the same. On the approach of severe weather it is a very good plan to lay some of the late kinds just coming into use down on one side, by taking a small spit of earth out from the root on one side and bending the plant down that way, laying the spit on the other side; it is best to point them to the west as being the direction they are least likely to take harm, the centre or head being protected by the overlying leaves.

Cauliflower.—This is for the summer what Broccoli is for the winter; and, if care be taken to plant a few Cauliflower plants in an early situation, and a few of the latest kinds of Broccoli in the latest places, it is likely the latter will carry on the supply until the former come into use. Usually there is about a week blank between the two: this, however, may be got over by careful management as above. Cauliflowers afford few varieties; but sometimes a spurious kind gets into cultivation. But as every one knows the genuine article it need not be described here. Sow on the 1st of September for the first crop, and as early in the spring as can be done for the second. Succeeding crops may be sown up to the end of June. Plant out on good ground, as this plant is a greedy liver; and is benefited by occasional waterings with liquid manure. The young plants kept over the winter must have some protection either of glass or something as a substitute for it; sometimes, however, they will stand mild winters unprotected, but it is better to have a few under shelter lest an unusually severe winter set in; plant 2½ feet apart each way, on ground that is deep, rich, and open. Some of the summer crops may be on a north border in the very hot weather; but, generally, this crop does best in the open square.

Cabbages.—To the cottager this is second to no vegetable that is grown; neither is its use less thought of by the more wealthy, Cabbage and Cabbage sprouts being supposed to be forthcoming at least nine months of the year. As a vegetable the Cabbage has certainly improved the last twenty years; the liability of the plant to run to seed in April has in a certain measure been got over, and some of the best varieties can now be forwarded somewhat earlier the preceding autumn on that account. About the 20th of July is soon enough to sow the first batch, and again the 1st and 12th of August; and, as some uncertainty hangs over the first lot, it is best not to plant too many of that sowing. A second sowing may be made early in spring, and another after that if required; but, generally speaking, the sprouts from the first plantation serve the after season. The varieties are numerous enough; but Barnes' Dwarf, Blenheim, and Imperial, are all good early kinds; while the Nonpareil and Enfield Market are also good, but a little later. The Red pickling Cabbage may also be mentioned here: this need not be sown until spring, as likewise may the Braganza or Couve Tronchuda, a loose-growing plant, the ribs of the leaves being the part eaten; it is like the Red and Drumhead (or Scotch), an autumn Cabbage, and they all require more room than the ordinary spring or summer Cabbage; but the requirements of the whole are much the same as that of the Broccoli, Cauliflower, &c. The instructions there given as to planting, applying also to this [illegible] Robson.

(To be continued.)

GLADIOLI ATTACKED BY WIREWORMS.

My varieties of Gladiolus gandavensis did worse than usual last year. The bloom of most of them was destroyed by thrips; but, besides these, the leaves of many turned brown and died off before coming to maturity. The bulbs of some of these had been eaten into, I suspect by wireworm, but I am not sure whether this was the result or the cause of unhealthiness, as the more weak-growing kinds were generally attacked. Will a mixture of lime render them less liable to be attacked by vermin? The soil is light, but the situation damp and overgrown, and ground vermin are abundant. I plant the Gladioli in a prepared trench 3 feet wide, filled with made soil to a depth of 3 feet. This may possibly encourage wireworms. If you recommend lime, in what proportion ought it to be mixed in a trench of the above dimensions? I always put a handful of sand below and above the bulb.—Philo Gladiolus.

[You were not worse off than nine-tenths of all the Gladiolus-growers last year. The year before was so wet that the bulbs never ripened properly, and we personally know that the thrips and red spider had an exhibition time of it all last summer. But our Gladiolus bulbs were planted in 1859, and there they are and shall be as long as we live, and no one shall disturb them the while, and, of course, we shall be better off than you and most of them next year; but your Gladioli will do pretty well if you can get rid of those grubs and the wireworm. Lime and soot would be good things to make the beds or trenches uneasy for them; the whole surface to be first made as black as soot can make it, and then to be made as white as snow with lime; and no more than a score of castocks would rid you of all the wireworm in one week, and this kind of castock must be the sappy stems of any one of the Cabbage tribe, cut into slices and stuck into the soil and looked to every day to kill the vermin.]

VARNISHING WOODWORK OF A GREENHOUSE.

I am building a span-roof greenhouse with pitch pine, and, on account of the beautiful grain of that wood would prefer dressing it with anything rather than paint. What would you recommend? Do you think boiled oil or varnish would answer, and if so, would it preserve the putty as well as the timber?—John Stevens.

[We would paint the putty, and when thoroughly dry, varnish that as well as the wood. Many stations of the railways, in Scotland especially, are so done and wear well.]

HOT-WATER HEATING—SOWING WELLINGTONIA GIGANTEA.

You were good enough nearly twelve months ago, to give me some useful information respecting the best form of boilers and pipes for heating a late vinery. I adopted your advice in many points, and have found the apparatus work well; but as I believe, in some respects, my plan is new, it may be useful to detail it, for the benefit of those who may yet have vineries to erect.

Further. I profited by the advice of one of the most skilful Vine-growers in the north of England, in forming the house itself, and Vine-border, and as I observe you have frequent inquiries on those points in your pages, I will with your leave begin at the beginning, and state very particularly in what way I proceeded.

Having fixed upon the site for the vinery, which happened to be in an old pasture lying to the south of my kitchen garden, in the first place all the fine old turf necessary was pared off precisely as if it had been wanted to lay a lawn, and laid up in stacks, with a layer of old cowdung between two layers of turves. The frosts of winter had a pulverising effect upon the turves, and in spring when we were ready for the border, the whole mass was chopped up with spades, turned over and over, and thoroughly amalgamated.

Having then staked out the positions of the house, back shed, ash-pit, &c., we ran a drain from the latter point due south under the intended border, and made another drain along the entire front of the border. A wall of stone lined with brick, and containing a flue, was then put up, in length about 50 feet, height 13 feet or 14 feet, and a shed 35 feet long, and divided [illegible] parts for boiler-house, tools, potting, &c., was placed at the back. The vinery is 35 feet long, and there are seven lights, each 5 feet wide. There is no wall in front, but eight pillars of brick 9 inches square support the wall-plate, upon which the front lights rest. Each light hangs by hinges at the top, and may be pushed out for ventilation; but my adviser warns me against giving air here. The rafters are 15 feet long, and the lower divisions of the lights, which are 11 feet, are fixed. The upper lights of 4 feet long slide by means of pulleys, ropes, and weights, which hang in the back shed; but I can ventilate at pleasure from the inside of the house by means of a pole very similar to a boat-hook.

The border is both inside and outside, and a two-foot wall about 3 feet from the front of the house supports the former, and also makes a convenient stand for plants. In making the border, about 2 feet depth of broken bricks, stones, and lime rubbish were first deposited as a foundation, and upon this the compost was laid to the depth of about 2½ feet, with a rapid slope to the south. Within the house, and immediately under the supply-cistern a deep reservoir is sunk; this is filled from the roof, with a waste-pipe into the drain beneath the border. I have a garden force-pump with a pipe reaching nearly to the bottom, fixed in the lid of the reservoir, and with this I can deluge the house when necessary, and can also fill the boiler from the supply-cistern.

My heating apparatus consists of a cylindrical wrought-iron boiler 3 feet long by 1 foot 6 inches wide, with four flues through the middle of it. It is set so that the fire plays over the top, passes through the flues, and then goes into the long flue which runs, in the back wall, to the other end of the vinery, and so up a chimney there. The pipes are 4 inches round, cast with evaporating-troughs on the top. There are two flow and one return, all lying side by side, which extend across the east end, along the front to the supply-cistern, and so back to the boiler. These pipes are rather more than a foot above the ground, and hence a difficulty respecting which I will afterwards ask your advice. Owing to various unforeseen delays we were not ready to plant the Vines, two to each light, &c. (principally Black Hamburghs and Frontignans), until the second week of June last. They were not thicker than straws, and were planted outside and brought under the wall-plate; but by keeping up a steaming atmosphere averaging 70°, the Vines sprung up to the top of the rafters and half way down the back wall, and in October the wood, nearly as thick as my little finger, was thoroughly ripened and in splendid condition. I attribute this result, in a great measure, to my having the power, by means of my forcing pump, to thoroughly deluge the inside of the house, at the same time keeping up the heat.

The difficulty to which I above alluded is this—I think of adding a conservatory to the vinery, and wish by the present heating apparatus to heat the former but not the latter. You will see, if you can follow my description, that I am debarred from making a door out of the west end by the pipes, which there cross the house, and if I place the conservatory at the west end, how can I heat it and leave the vinery cool?—A Subscriber.

P.S.—Is there any difficulty in raising Wellingtonia gigantea from seeds, and how long are they generally in germinating after being sown in spring?

[Your operations as to border-making, &c., are more generally successful than new. Had we such material, we would, perhaps, not have chopped it so much, and would like to have added some calcareous matter. We have always advocated that little is gained by planting Vines when the ground is cold. The only thing that surprises us, is, that after making a border inside communicating so freely with the outside, you have nevertheless planted the Vines outside. See notes on Rockfield, &c. The success, however, is very encouraging, only it may be as well not to use too much moisture in the house, nor yet to take much fruit this season.

We see no means of getting out of the difficulty, as to heating the conservatory, without a change near the boiler, which might have been provided for at first, if a conservatory was then thought about. We could manage the conservatory with little alteration, and heat it only when wanted, but that would not enable us to prevent the heat going to the vinery. The simplest mode would be to cut the flow-pipe as near the boiler as convenient, and there insert a knee-piece with a valve-joint, stopping the flow into the vinery, and branch flow behind leading into the conservatory, with a valve likewise on that, so that the flow to either house may be shut off or let on at pleasure. If the boiler is low enough to permit the pipes being lowered at the pathway, it would also be desirable to have free access from one house to another, and on the same level. The pipes in the house might remain then just as they are, except the ends beyond the doorway would be fixed in an upright socket, and the junction of the pipes for both houses, and their respective valves, could be below the floor-level. You would find it a great advantage to have free communication with both houses. The same thing might be done without these valve-stoppers, by taking the flow-pipe from the boiler to a cistern close to the back wall a foot or two higher than the pipes—say 24 inches or 30 inches, and one pipe might go from that cistern below the pathway, to communicate with the raised pipes in the vinery, after passing the doorway, and another pipe would go from the cistern to the conservatory. The return in both houses may go to the bottom of the boiler by a joint or T-pipe there.

You need not disturb yourself by shutting off the returns unless you like. Provided there are the means of circulation, the returns will take care of themselves. The holes in the cistern may be regulated by plugs just as you like, and there is no danger of getting out of order, as the best valves in these socket-joints will do. We stated above, that if it had been merely to heat the conservatory, less trouble would have been required. A gentleman last year had a small conservatory just heated as your vinery is, he put up a glass case on the one end of it, and was anxious to keep out the frost merely to keep things alive in it; but he was frightened at the idea of a heating bill, and must have no alterations made, and, besides, had as many three-inch pipes by him as would do what he wanted. Well, we recommended his drilling a hole in the middle of the flow and return-pipe 1 inch, or, rather, 1¼ inch in diameter, and in this was securely fixed 2 feet of a lead pipe with a brass tap fixed in the middle of it. The other end of the lead pipe went firmly with red lead into a piece of wood, that plugged-up the end of the three-inch pipes, these pipes being placed as flow and return in the usual manner. The gentleman believed that the turning of the brass tap would keep out the heated water, but he would not believe until forced to do so, that the turning of that beer-barrel tap would soon cause the pipes to be almost as hot as the pipes in the conservatory. The materials being on the place, there was little more expense than the taps, the pieces of lead, and the Portland cement for the joints. Altogether, the success was so much prized at the time, that there was no end of badinage, and for sanguine people there might have been a vision of a hamper at Christmas; but our own experience would lead us to the conclusion, that even the receivings at the office of the great *Punch* are matters that have their existence in a heated imagination, rather than in solid reality.

Keep the seeds of the Wellingtonia in a cold pit, and let them have their time. Fresh seeds will come up the quickest. If yours have been long kept they will require more time, and may not come up at all. If you suspect age keep them rather dry.]

SOWING MISTLETOE SEED.

In reference to the Mistletoe question. I inserted a number of seeds some five or six years ago, under the bark of different trees, making an incision, and after pushing in the seed, merely pressing the bark down upon it. If done beneath the branch I do not think the birds molest the seed, for, in fact, they do not find it. I cannot say my practice is very successful, as I have only two plants on a scarlet Thorn, and the growth is extremely slow. Indeed, one plant is not 3 inches long, the other about 6 inches.

Is it possible that Viscum being diœcious, the seeds are not always properly fertilised, and hence the want of success, for nothing is simpler than the process of sowing? I have not succeeded by grafting.—A. R., *Bromley*.

Death of Dr. Mackay.—With sincere regret, we have to announce the death of this generally and highly regarded man. It is true that it was not an unexpected event, for he had reached the great age of eighty-seven years, and paralysis for the last two or three of their number had weakened his sturdy constitution, which bronchitis finally subdued on the 25th of February. He died at his residence, Dawson Grove, Dublin. James Townsend Mackay, LL.D., is associated in the mind of every botanist with the "Flora Hibernica," of which he was the author, and with the Dublin University Botanic Gardens, of which he was the founder, and had been the Curator for nearly fifty years.

CULTURE OF EUCHARIS AMAZONICA.

Last autumn I obtained a bulb of Eucharis amazonica, and I should be very obliged by any information about its culture. I received it in a small pot, from which I shifted it to a nine-inch pot, and have wintered it in a pit where the heat was kept from 55° to 60°. It has been not very damp at the roots, nor yet quite dry, but somehow it does not seem in a very flourishing state. It threw a sucker from its side, and that seems to take the lead from the parent plant. What more am I to do to this bulb, and when am I to expect it to flower?—G. R.

[Your bulb of the most beautiful Eucharis amazonica, is, just now, the most prosperous bulb in cultivation, and no one could have treated it better than you have done. It is an evergreen bulb, and, of course, you know evergreens do not always bloom in winter. All that you could now do to make this bulb worthy of being proud of, would be to have the pot plunged at the back inside of a Cucumber-pit, or a pit like it, where the air would be given overhead, and keep it there to the end of May; then out with it to the stove, and it will bloom as white as a Water Lily towards the end of July, or sooner or later; but any place affording bottom heat will do the spring work, and old bulbs do not require it. But keep your bulb in the same pot all this year, and the first half of next.]

TREATMENT OF OLD CAMELLIAS, PEAR TREES, AND ORANGE TREES.

I have lately come to this place, which is ninety miles north of Dublin, and have some large plants of Camellias; they are in tubs, but the blossoms are not larger than Pompon Chrysanthemums. I think that the soil is very poor, for they are growing in part loam and part peat, both of which I think are very poor. Now, I think of cutting the plants back, then starting them in a Peach-house that I have just begun to work, and after they have made a little growth getting the greater portion of this soil off them. Afterwards I would tub them in good loam and peat, with portions of bone dust and charcoal. Do you think that I shall have bloom on these plants next year? If so, I would prune rather hard to get them well furnished.

I have also a lot of old Pear trees with very old and long spurs; I am told that they bear no fruit. I purpose cutting off those spurs close to the branches, then rubbing off some of the shoots, and after breaking treating those that I retain as directed in The Journal of Horticulture, No. 41, page 294, fig. 5.

There are a great number of trees here covered with moss. Can I get it off with lime newly slaked? I have also some Orange trees that I think of serving like the Camellias.—Y. C.

[Your large Camellias are now in large tubs, and are unshapely and produce small flowers. To bring them into health you should, first of all, procure a quantity of fresh light turfy loam, and some sandy fibry peat or heath mould; and also some well-decayed leaf mould. Mix these well in the proportion of two parts of the loam, one part of the heath mould, and half a part of leaf mould. You may add about an eighth part of charcoal, broken in small pieces; incorporate thoroughly together, and place the mixture in a warm shed to become moderately dry, and have the chill taken out of it. As soon as that takes place repot your Camellias in it, taking care to drain them well: this is an important point, for if not thoroughly drained the young fleshy roots perish every winter. This repotting should be done immediately in order to obtain root-action before the plants begin to grow. The same practice is adopted by the best planters of all kinds of trees, the season of rest being preferred—that is, the autumn, to planting late in spring.

In potting pick out as much of the old poor soil as you can without injuring the roots. If the roots are very much decayed it may be advisable to repot the Camellias into smaller pots or tubs. On that point exercise your own judgment.

As soon as they are all put into this fresh soil, place them in a cool greenhouse for a month or six weeks till you observe the young shoots are pushing, then place them in a warmer house and use the syringe daily, but not too much water at the roots, [illegible] just enough to keep t[illegible] moist [illegible] the season advances. With regard to pruning, you need not be afraid to use your knife. The best time is just before the growing season commences; the dormant buds are then ready to push forth, providing any roots above them are cut away. Continue a liberal supply of moisture in the air and at the roots through the growing season; but as soon as the blossoms begin to be formed cease syringing, and give less water at the roots. This is preparatory to removing the plants into the open air towards the end of June, or beginning of July; choosing a place in your garden where they can have the benefit of the morning sun till about ten o'clock, and after that time be shaded from it.

Your Orange trees may be treated in the same way as the Camellias, only they thrive better in a stronger loam, and can bear a stronger heat when growing, and also, unless you are in a warm, sheltered place, it is not advisable to place them out of doors even in summer. In the south of England they may be set out in the open air; but in the north the leaves turn a yellowish-green when fully exposed, giving the Orange trees a sickly, unhealthy appearance. In such a climate it is much better to keep them continually in the greenhouse or conservatory.

If your old Pear trees are healthy and growing strong, severe pruning will cause them to produce a great quantity of young, unfruitful branches: therefore, supposing them to be healthy, root-prune them immediately, and prune them as you describe you intend to do, then disbud part of the young shoots and nail some here and there to the wall. It is possible then you may have some few fruit-buds this autumn, and afterwards your trees will be fruitful. If they are weak and sickly, then cut off the long spurs, remove part of the old soil and replace it with some good loamy turf-sods, without any manure. This will throw fresh vigour into your trees, and restore them to a fruitful condition.]

PROPOSED BIRMINGHAM ROSE SHOW.

An advertisement in our columns to-day announces a meeting for the purpose of establishing, what we cannot but anticipate will be the introduction of more than one annual horticultural show at Birmingham, and we are ready to believe that the same energy which established Bingley Hall and its exhibitions will be equally successful in this effort.

In addition to a Rose Show, it is proposed to include an exhibition of garden ornaments of every description, and of horticultural tools; the whole to be assembled in the noble Town Hall of Birmingham. The project is countenanced by all the principal local amateurs, amongst whom are included many gentlemen of influence.

No endeavours we are told will be spared to insure a first-class Show, and the promoters have no other objects in view than the advancement of the interests of horticulture, and the supplies to this town and neighbourhood of a fresh source of pure enjoyment. The Show is announced to be open to all England; but, we presume, Scotland is not to be excluded, for the promoters want to enlist the support of all the great growers; and one circumstance in favour of a show at Birmingham is that it will be especially appropriate for northern florists, who cannot bring their out-of-door flowers forward enough to compete with those of the southern florists. The days of exhibition at Birmingham ought to be later than at London.

A FEW DAYS IN IRELAND.—No. 15.

(Continued from page 413.)

ROCKFIELD, COUNTY MEATH.

This compact residence of Thomas Rothwell, Esq., is within a few minutes' walk of the station at Kells; and, from the level character of the ground in the neighbourhood, has to depend chiefly on its own park and woodlands for rich views and picturesque scenery. Much has already been done to enhance and give variety to the charms of the landscape, and much more will no doubt yet be accomplished by the liberal, enterprising, and improving proprietor. The neat lodge and handsome gates stand at right angles with the public road, a sweep inwards on each side giving an abundance of room. The approach, though not long, is considerably varied, passing first through a grove or wood, the road hard and smooth, the curves easy and graceful, and the verges of unequal width, from the trees and shrubs advancing and receding, and thus preventing monotony of outline. Anon it enters the park, showing the mansion on the right, past which it sweeps, and the site of the gardens, the offices on this side being concealed by planting. The park in front of the mansion is also considerably varied, the trees being tomewhat regularly dotted on one side, and arranged in more selling separate picturesque groups on the other, backed by denser masses of timber. Through these woods and groves are many beautiful walks, and seats, and summer-houses, which must be pleasant in hot days in summer. In many places we noticed fine young undergrowths of Laurel, and have no doubt that in comparatively open spots Rhododendrons would thrive equally well. One advantage of the low position will be that water may be induced to lend greater attractions to the scene, as we have a vivid recollection of scrambling with difficulty over a rivulet to look at a huge heap of compost.

Not wishing to pass the entrance front of the mansion, and more especially when a carriage was standing there, we turned in at a gate on the right, hoping to get into the garden through the stable and farmyards; but all doors leading that way were fast and secure, so that we were forced to pass the mansion and a small flower garden at the side. We at length got to the kitchen garden and met with Mr. Watt, and experienced all the kindness we could expect from an old friend, though we had only once had the pleasure of meeting him before this visit.

The sight of the place rather bewildered us, and led us to conclude that in the building way there had been little done for years in the style of modern ideas, except what had reference to the mansion itself. The garden is so peculiar and so mingled, that we should be sorry to hear of its being ruthlessly modernised. Without a rough plan and sketches, we could not give an idea of the appearance of romantic antiquity that would be so charming to many. The chief impressions left on our mind are a wide slip for vegetables, &c., on the side farthest from the mansion, bounded on two sides by one of the finest hedges we ever saw, and on the other sides by massive stone walls 20 feet in height; other walls of the same dimensions reminding us of the outer and inner fortifications of an ancient keep, and conjuring up ideas of raids and forays instead of the more humanising pursuits of gardening; then lesser walls and lesser divisions, where we meet with pits, frames, and all these essentials for modern gardening; and again, where we could scarcely expect it, a fine green lawn, with a miniature lake, soon to have its sides rendered romantic with rockwork, and its stillness broken by the trickling and dashing of a fountain; and on the lawn already many fine things, among which we noticed good plants of Rhus Cotinus; splendid bush Filbert trees; fine specimens of Rhododendrons, showing what such plants will do in such a climate; and among good Hollies, one white variegated one 19 feet in height, and 36 feet in diameter of head where it swept the ground.

As in other places, the supply of fruit this last autumn was below the average, and some of the trees on the walls may have done their duty in days that are gone; but we believe that ere long, what with planting, and grafting, and lifting, and pruning, these gardens and walls will be stored with all the best fruits that will ripen in the climate. Other departments will follow in the same race of improvements. From what we saw we have every reason to believe that, owing to the good taste, the experience, and the intelligence of all concerned, all these modern improvements will be gradually introduced into this singular old garden; and, yet, with such a conservance and care-taking of the marks of the old and hoary as not to disturb even the prejudices, and far less the well-founded veneration, of an old buck of an antiquary.

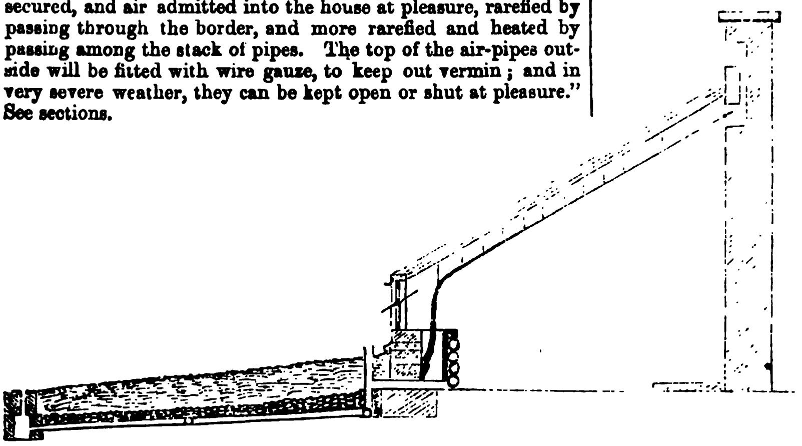
As a firstfruit and earnest of future improvements, we noticed a massive range of glass houses, recently erected, more than 100 feet in length by 14 feet in width, and from 5 feet to 6 feet in height at the front, and 14 feet to 15 feet at the back, divided into three divisions—a Peach-house and two vineries. This range is to be extended above 60 feet, to be divided into a plant-stove and greenhouse. And now, we understand, there is building a span-house 80 feet by 12 feet for Melons, Cucumbers, and early vegetables and flowers. In building these any slight errors overlooked in building the first range will be more easily avoided. We would not have alluded to any small desirable improvements in the new range which we saw had not Mr. Watt solicited our candid opinion; and, as we do not even know the name of the builder, and could find no fault with general details, the mention of some minor matters, which we deemed would be improvements, may be of general use and advantage.

The first thing that struck us there with respect to this range, as well as some other new ranges in Ireland, was simply this—that there was not half enough of top ventilation. The front ventilation is ample enough, the whole of the front sashes swinging on pivots, being shut or opened less or more by means of an iron rod and lever. The broad roof is almost like a sea of glass, fixed, stout rafter sash-bars, and the squares of glass being 20 inches by 39 inches. A ventilatòr about a foot deep is placed in the back wall at the apex, opposite every third square of the roof; but that in a hot summer, without the bother of shading and thus counteracting the clear light from the roof, would not prevent scorching and burning, and plenty of red spider to the bargain. From the mode adopted the opening even is not so large as it seems. With such a mode an opening at every alternate square would hardly be enough; it would have been better to have had the whole back thus ventilated, with the exception of the necessary small piers to keep up the higher part of the wall. Provided that a sufficiency of outlet for heated air can thus be given, the plan has much to recommend it, and especially in early forcing. The roof being all fixed, before much air is needed, it will be mellowed and heated by reflection from the glass before it rushes in at the opening in front of the wall and gets down into the atmosphere of the house, thus avoiding the ruinous effects of cold draughts. Air can thus be given plentifully, even in wet rough weather, when it would not be desirable to move sashes, or even top ventilators. The very advantages of the system, however, demand plenty of power at command, as the air in general admitted will be warmer than it would be if admitted from the north side of the wall, or even at the apex of the roof where there is no projecting wall to reflect the sun's rays. In the case of a single house much relief could be obtained by opening the spaces above the doorway, where, in a hot day, we would expect the air to rush out with a force sufficient to drive a windmill; but in several divisions that cannot be depended on. To make all sure Mr. Watt tells us he is now introducing Moore's Patent Ventilator, the size of the square of glass, between every alternate two squares at the apex.

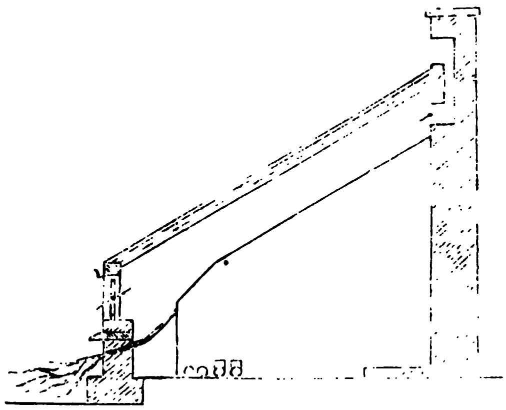
The second thing we noticed was that the floor was pebbled inside, and had neither stages nor pit inside, so common in vineries in Ireland. We believe that a flagged or pebbled floor is a fine thing for reflecting light and heat, especially in the case of late Grapes; but Mr. Watt will be lucky if he be able to keep the floor from being otherwise occupied. We also noticed that a paved pathway went close to the back wall, opposite the doorway at each end. This is very convenient, and in the case of established vineries brings the best bunches most prominent above the eye; but for houses to be made the most of, it would be better to have the door in such lofty houses, and the main pathway some 15 inches or more from the wall. A crop might then be obtained from the wall before the front trees monopolised the roof; and if that were not desired, a series of shelves for Strawberries, Beans, &c., could be better seen and attended to.

The only other particular thing which we discussed together was the mode intended for planting the Vines. The front wall was built solid, and small holes left for the Vines to come through. Owing to circumstances, which we could not alter without having everything changed, this is the plan we had to follow ourselves; but we by no means approve of it. In all cases, but especially of early-forcing vineries, it is important to have the stems inside of the house. The great things to be attended to in that case are to have the arches of the front wall high enough, so that the roots go out freely, and not to have the outside border higher than the inside one. The difficulty in this respect at Rockfield was the nearness of the stack of heating-pipes to the front wall. That, however, has since been overcome, by a little alteration we presume; and now, after building a four-inch wall in front of the pipes, and breaking arches in the previously solid wall, there is a space of a foot wide for planting the Vines inside, each Vine in the centre of the arch-opening.

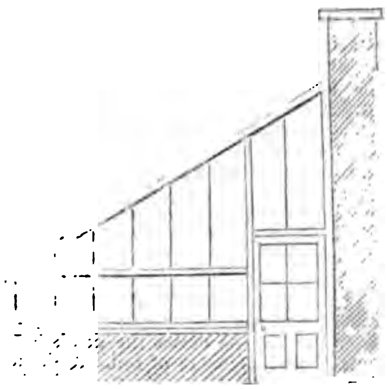
The mode of forming the border is, perhaps, an improvement on that of Mr. Scott, of the Vice-Secretary's, Phœnix Park, as detailed in these pages, No. 5; Mr. Watt, considering the moist climate of Ireland, is no advocate for deep borders. The subsoil is gravel, and above the drains the depth is 32 inches—12 inches of rubble and 20 inches of soil. A drain 12 inches square, and covered with flagstone, goes along the front. Two other drains pass longitudinally along the border—one along the middle, the other close to the front wall of the house. "These are all connected with cross-drains, 4 feet apart, of earthenware pipes 4 inches in diameter. At the junction of these, close to the wall of the house at every other archway, they communicate with the surface of the border by perpendicular pipes. From each of these perpendicular pipes a horizontal pipe passes inwards through the four-inch brick wall previously alluded to, and in this is fixed a circular ventilator, so as thus to admit rarefied front air when it might not be safe to open the front lights. The main deep drain is furnished with four uprights, or shafts, and these being much lower than those at the front wall of the house, a constant circulation through the border will be secured, and air admitted into the house at pleasure, rarefied by passing through the border, and more rarefied and heated by passing among the stack of pipes. The top of the air-pipes outside will be fitted with wire gauze, to keep out vermin; and in very severe weather, they can be kept open or shut at pleasure." See sections.



Section of Vinery.



Section of Peach-house.



We will just notice two more things—first, several nice plants of Figs, raised from seed from dried Figs sown by the young ladies some eight years ago, which have never yet fruited, but which we feel sure will soon do so under such glass houses as now may be at their disposal, with a little curbing of the roots, and nipping the shoots. We trust that the fruit will be worth waiting for, though in such a case it will be pretty well a lottery as to desirable qualities. The second things were several white-leaved plants somewhat like Cineraria maritima, but altogether distinct in habit, as having a decided trailing tendency; the main shoots being bristled all over with short, stubby, white-leaved shoots, and, therefore, would look splendid suspended from a basket. Mr. Watt informs us that some plants have shoots now 6 feet long, and thinks, as it is half-hardy, it would make a fine low edging plant pegged or laid down. The parent plant was obtained from seed three years ago, sent from the Cape of Good Hope under the name of Arctotis grandiflora, and the plants at Rockfield were raised from that, as every inch of the plant will grow. We rather think, however, that this trailing or hanging feature is a peculiarity, as, from what we recollect, the Arctotis referred to was rather upright in habit, but we may be mistaken. Such a plant of good size would form a fine feature suspended from a basket in a large conservatory. Though no doubt easily propagated, and though generally successful, we have been particularly unfortunate with this very desirable thing. Mr. Watt gave us a few cuttings, which were ruined by coming within the clearing sweep of the chambermaid at Dublin, and then, on getting a few sent by post, they were so smashed by stamping, that we were beat in trying to get them to live. If the plant is at all common we have not seen it before; but for edgings to small beds and for hanging from a basket, we feel sure it will be an acquisition. We hope Mr. Watt will try it for different purposes this season, and report progress. R. Fish.

PLANTS FOR SUSPENDED BASKETS—CAMELLIA-BUDS BROWN.

I want from the end of May to the middle or end of August, to have four suspended wire baskets in my conservatory, filled with some plant or plants that will be very gay and ornamental during that period. What would you recommend? I have a large Camellia with which I am sadly afraid there has something gone wrong. The buds have come forward to a certain stage and suddenly stopped, and are commencing to turn brown. It has been suggested to me that it was put out of doors in an exposed place too early last spring. Would such treatment cause this? —A Subscriber.

[For suspended baskets to hang—say from 3 feet to 6 feet below the basket, we question if you could have anything better than white, crimson, purple, and pink Maurandyas—say three nice plants of a colour to each basket, if from 12 inches to 15 inches and 18 inches in diameter, and three stout plants of Lobelia gracilis between the Maurandyas. If the house was kept warm and moist, we would then think of Thunbergias and the best Convolvuluses. The baskets may have a stubby centre—such as four varieties of Fuchsias. Your Camellia is more likely suffering from want of water, or too much with deficient drainage. You may plant your climbers now, but do not overwater until they are getting into fresh soil.]

EDGING PLANTS.

How close should cuttings of Variegated Balm, about 3 inches or 4 inches high, made last autumn, be planted to insure a good effect for edging this season? Also would cuttings taken this spring do as well? Will Cerastium that has been out all winter and turned green recover its colour? Does Purple Orach do well for ribbon or panelling, and would it agree with Perilla?—Inquirer.

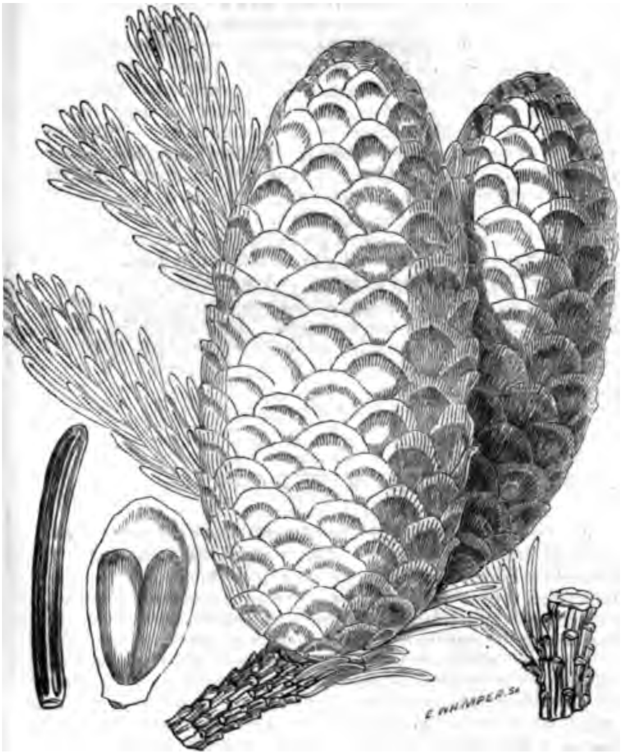
Th [illegible] cuttings or plants from last autumn's cuttings should be planted apart depends on three things—the first of which is the size of the plants; the second the kinds of plants which stand behind, or before, or on either side of them; and the third is the eye and patience of the owner. A good eye likes things to be as they should be, and it is an eyesore to see anything as it should not be; but good patience allows good distances between bedding and ribbon plants to give the plants the proper room and strength to blossom well. Well, but Variegated Mint (we have no Variegated Balm for bedding sides), does not bloom, or is not planted for bloom, and one can go on the principle of cutting according to the cloth, and plant the Mint at 1 inch apart, or 2 inches, or 3, 4, 5, or 6 inches—the widest distance that can be allowed. 1 inch apart is not too thick planting, no matter how big the plants are; 3 inches apart are not too wide, no matter how small the plants may be.

Cuttings of Variegated Mint made at the latter end of April, if planted in double rows 3 inches apart, and 2 inches plant from plant in the row, would make extremely pretty lines like those that Mr. Eyles gave us last season in the new garden at South Kensington.

Purple Orach requires a good eye, a good hand, and a good judgment to make a splendid row of it; the contrary would only make an eyesore of it. It and Perilla would agree in making two shades of purple; but purple flowers or leaves are not very good subjects for shading or for night light.]

ABIES ALCOQUIANA.—*J. G. Veitch.*

MR. ALCOCK'S SPRUCE FIR.



Among the Conifers that have been sent home by Mr. John G. Veitch, is one which he has named in honour of Mr. Rutherford Alcock, Her Majesty's Minister at the Court of Yeddo, and of which we furnish our readers with an engraving drawn by Mr. Fitch. It is said to be "a noble Spruce Fir, in some respects resembling the Abies potita of Zuccarini, from which it differs in having much smaller cones, with scales of a different form, very small leaves, glaucous on the under side, blunt or emarginate, not mucronate, and flat, not four-sided.

Mr. Veitch found this on Mount Fusi-Yama, at an altitude of 6000 to 7000 feet. The tree is 100 feet to 120 feet high, and the wood is used for light house work.

SHADING GREENHOUSES.

The aspect of my greenhouses being almost due south, sunblinds will be required in the summer, and the wire trellis prevents my having it inside. I propose placing them on the outside, on a roller to be drawn up from the back, such as I saw in 1860, at Kew Gardens, but do not recollect the kind of cloth used. Would you recommend "frigi domo," "Brown's floral shading," or what other texture? Would muffing the glass with paint, putty, or whitewash answer the purpose? and if so, should it be put on outside or inside?—S. D. Goff.

[Frigi domo, or what you prefer, will answer for an outside blind. The modes of managing them have been frequently given.

For shading, the following composition is good:—One quart of jelly size, one quartern of soft water, half a quartern of turpentine, half a quartern of linseed oil, the size of an ordinary walnut of whiting powdered small, and all mixed together and heated until near the boiling-point, then laid on whilst hot as thinly as possible with a brush, and the place dotted with the points of a dry brush to give it a ground-glass appearance. This will keep on for the season, until heavy autumn rains, and a brush with warm water will remove it when desirable.

We do not see, however, what you want a shade for a house in which Vines are grown. We would prefer more air and all the sunlight possible. Melons and everything else that are grown for fruit are better without shade; but, like rickety children, if you commence with it you must keep on. A little temporary shade is often wanted when bright sun comes after a course of dull weather.

OIL FOR A WALTONIAN LAMP—NEMOPHILA SOWING.

Can you inform me what sort of oil should be used for the lamp of a Waltonian Case? I have tried two kinds, and both produce too much smoke and smell to admit of the Case being kept in a sitting-room. Can the flue need cleansing. If so, how is it to be done?

Can Nemophila insignis by repeated sowings be depended upon for making a good blue bed until October. If so, how often should be it sown?—An Old Querist.

[Nemophila, blue, white, and variegated, can be had in bloom every day from the first opening in April till the middle of November, if the frost would let it go on, and people choose to take the trouble to do it so. To have it thus, however, you would need to devote five beds, if not six to it, instead of one, and five or six sowings. The first at the beginning of September to bloom in April—say to be in bloom by the middle of the month; the second bed to be sown at the end of February; the third at the end of March; the fourth on the 10th of May; and in most seasons, the fifth sowing would do any day of the last week in June; but to make quite certain we would have a sowing the last week in May. We once used to have one row of the blue Nemophila 75 yards long in bloom every October Newmarket day, and in most seasons it lasted out through November, and in snow it was a beauty.

Mr. Walton himself uses the best colza oil at 5*s.* per gallon, from Bond Street, London, and his Case is now the only one that we can have a look at. There is no soot, or any flue or chimney-sweeping about it. But there is a nicety about trimming all kinds of oil lamps which some people can never hit on, while others never meet with the smallest difficulty in doing them to the shade of a flame. The very same lamp and Case which Mr. Walton had seven years since are now at work, and look just as good as the first season. The gardener likes it, and looks after the lamp of course; but in the spring, we believe, Mr. and Mrs. Walton do most of the cuttings and sowings if all were known.—D. B.]

VENTILATING A LEAN-TO ORCHARD-HOUSE.

I have an orchard-house 22 feet long by 12 feet wide. Sashes in front about 20 inches deep, which open the whole length of the house. Two apertures, one at each end, at the point of the roof, about 10 inches by 9 inches. The ends are brick about 3 feet high, above which they are boarded. It is erected against the wall of a house, so that there are no ventilating-shutters at the back. Please tell me in your next Number if this will be sufficient ventilation. Also, please say, if Peach trees, &c., will do well, the tops of the trees being about a foot from the glass. —A. B.

[You will scorch the trees against the back wall. If the openings at the end were 1 yard square instead of some 10 inches, and you had two more in the middle of the roof, at the apex, you would do. At present we know you will fail if your house is a lean-to. If it were span and air on each side, it would be different. The Peach trees will do as well if 15 inches or 18 inches from the glass.]

COCOA-NUT FIBRE REFUSE.

I APPLIED in accordance with your recommendation to Jackson, of Sydenham, to obtain some cocoa-nut refuse for growing Ferns, but found that he had parted with all his stock. Could you inform me in your next Number where it may now be had? —A CONSTANT READER.

[The Cocoa-nut is crushed for the fibre only, and that only at Kingston-on-Thames. You must not only send your own carman for it, but he must fill his load himself, and he can put into his cart just as much of it as he likes, so that one horse can carry it, and for that 2*s.* only are charged. That one load would do for twelve months, grow all the Ferns in ten of the largest private Fern establishments in England, Ireland, and Scotland. Two shillings worth of it would do more good to most of the Ferns in the ten collections, than twenty loads of the best peat and two loads of Reigate sand, for this stuff supersedes all sand and peat for Ferns. Then if twenty of the large, fifteen of the larger, and ten of the largest growers of Ferns were each set separately, to club so many pence or shillings, and send one carman for a load to be had in common, or divided by the bushel, or to be sent from London by rail, they might have it nearly as cheap as we in Surbiton.—D. B.]

CULTURE OF HERBACEOUS PERENNIALS.

(*Continued from page 436.*)

TYING-UP, STAKING, AND THINNING THE SHOOTS. — In order to keep the plants tidy and neat in appearance it will be necessary to provide a sufficient number of sticks for the whole. The making of these is a nice winter's job for the gardener or amateur. For the tall-growing species, of course, long sticks or stakes will be necessary. I know no stakes so good as young larches—such as are easily obtained where large quantities of that useful timber are grown. For less sizes, split red deal, I believe, makes the best sticks. The larch stakes will last longer if the part that is thrust into the ground is carbonised—that is, just partially burnt in a fire, and the bark left on the remaining part. The other kind of stick should be painted three times over with dark green, and well dried previous to using. Before commencing to place the stakes and sticks to the plants, let the operator examine the plants, and where there are a considerable number of shoots, thin them out judiciously by cutting part of them down close to the ground, or, where they will bear it, even by pulling such extra shoots clean up. The object in thinning is to obtain finer and larger heads of flower; and the sooner after the shoots spring up this thinning is done the less they will injure those that are left. If a bundle of shoots is allowed to grow up together they will be weak, leafless towards the bottom, and the flowers will be poor and insignificant: hence the necessity and advantage of the thinning process, which I fear is but seldom done or thought necessary to be done. Then place the stakes or sticks to the plants in good time, so that the shoots that are left may be early secured and protected from strong winds. I sometimes found it necessary to use more than one stake to a plant on account of the large number of shoots; but this is seldom the case—especially if the shoots are well thinned. Place the stake so that the shoots may be tied to it in a circle, without crowding or having a bundled appearance; and this tying-up must be continued till the blooms appear. The attention to this point is of more consequence than may be imagined. Tying-up a plant in a careless slovenly way not only injures its appearance, but frequently destroys at least a part of the bloom. Like all other operations in gardening it must be done at the right time or times, and done, too, in a neat manner without bruising the stems or leaves. The best material to tie with is bast mat; it should be cut into proper lengths and fastened to the waist of the operator. If he wears that useful article a gardener's apron, the matting can be drawn through the strings, and the apron tied-up also to hold any shoots that it may be necessary to cut off, and also the ends of the mat or any stray weeds that may be found growing at the time. All this may appear tedious and unnecessary for me to write and some to read, but I write for those who wish to learn and understand how to do everything they have to do in a garden in the proper and best manner.

WATERING.—Herbaceous perennials generally have abundance of fibrous roots, which are in fact the mouths of the plant, to draw in its nutriment. In dry weather the soil will be dry also: consequently these mouths will not be able to gather in any food, and the plant will suffer severely. Remember, the food of plants must be in a liquid state: therefore in dry seasons, if you wish your plants to thrive, you must supply them with moisture; and this is more necessary if the soil on which they are growing is of a sandy character and not very deep in staple. Loamy deep soils do not dry so quickly; but even such soils will dry on or near the surface, and the fibres in such parts will shrivel-up and the plants suffer also: therefore, understanding this, let the plants have a good soaking of water in such weather; apply it liberally, and in order that it may not evaporate too soon, apply it in the cool of the evening. A large watering-pot, with a coarsish rose, is as good a utensil for the purpose as any; or what is better, a good large water-barrel on wheels with a piece of gutta-percha tubing, with a rose at one end and the other fixed near the bottom of the barrel, will water a long border more quickly, effectually, and easily than the watering-can. If the plants are not in flower, a gentle syringing will be of great service. This watering, to do any good, must be thoroughly done; mere driblets do more harm than good. It is like giving a thirsty man a thimbleful of water when a whole pint would scarcely moisten his throat.

To prevent evaporation taking place too quickly, as soon as the surface of the border is just dry enough, rake it over and keep that surface loose; or if dry weather continue the ground will crack or open here and there in fissures, out of which the moisture will fly off into the heated dry atmosphere with tenfold rapidity. Many growers of florists' flowers, such for instance as the Dahlia and the Hollyhock, in order to prevent evaporation, spread over the ground a covering of littery manure, which is of the greatest service—especially if water is given freely also; but this herbaceous plant-border being in a part of the garden that is highly kept, the littery manure would not be sufficiently tidy. I have used spent bark for the purpose, and where Pine Apples are grown there is generally plenty of that material which could be applied to cover the herbaceous border with good effect.

The above points being attended to properly and perseveringly, the owner may expect his border to make a goodly display of flowers through the season. T. APPLEBY.

(*To be continued.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

WE are now arrived at the busiest month of the year, and to most gardeners one on the right use of which will greatly depend their success in keeping up a plentiful supply of vegetables for the summer's and winter's consumption. This can best be done by having the soil well drained, and ameliorated by the winter's frost and by a judicious rotation of cropping. *Asparagus*, permanent beds should now be planted and the old ones filled up, two-year-old roots are to be preferred. Give air freely to the plants in frames and make other beds for succession. *Beans*, if the weather will permit plant out those in pots or boxes. Earth them up after planting. Get in another sowing of Windsor or Longpod. *Cauliflowers*, where there are more than four or five under each hand-glass, they should be thinned out to that number and planted on a rich piece of ground; or, if the Celery-trenches are opened and manured, they may be planted in them, as they will be ready to come off before the trenches will be required for the Celery. *Dwarf Kidney Beans*, if there are any in the vinery or Peach-house keep them frequently syringed, to prevent, if possible, the appearance of the red spider; if already attacked the better plan will be to remove them to a pit or frame, where no injury can be done to other plants. *Herbs*, they should now be sown or propagated by division of the roots. *Peas*, plant out those in pots or boxes a south border; plant them thinly in the rows, if it should even be necessary to shake the whole of the soil from their roots. If the soil of the border is stiff or wet, lay a little leaf mould over the roots. Successional crops should now be got in; it is generally necessary to sow two or more crops at one time unless the quick-bearing kinds only are used. *Potatoes*, in planting the early crop it is of great advantage to draw deep drills, partially fill them with leaf mould, then plant the Potatoes and fill up with the same. *Sea-kale*, whenever the produce is cut from a root, and it is not likely that there will be more shoots from it fit for use, clear away the litter, and cut the long straggling shoots nearly down to the ground: this will keep them within the compass of a pot or box.

FLOWER GARDEN.

Complete any planting which circumstances compel you to do; but, otherwise, do not choose this season. Remember there is no time like autumn; plants then suffer but little from perspiration, and you get from the warmth of the ground an immediate root-action at that time. Sweep and roll the lawns well. Owing to the mildness of the weather our gardens are not likely to be disfigured this year.

FRUIT GARDEN.

Finish the nailing of all wall trees. It is an erroneous practice still persisted in by some to cut out annually a large quantity of wood from young and luxuriantly-growing Peach and other fruit trees, instead of curtailing their roots; while, on the contrary, they leave sufficient wood in an old and weakly tree to suffice for two or three. The former practice produces disease and death, the latter small and almost worthless fruit. We do not recommend severe winter pruning of old trees, but that a much less quantity of young wood should be laid on in the spring; the fruit would then be superior both in size and flavour. As regards luxuriantly-growing trees, lay in all the bearing wood it is possible to do, and cut their roots in the autumn; or, what is better, lift them. Tie down the branches, before the buds swell too much, of the Pear trees trained *en quenouille*. Protect blossoms, mulch newly-planted trees, and water if the spring is likely to be dry. Prune and nail Figs. See that clay is prepared in good time for grafting purposes.

STOVE.

The plants of Aphelandra, Clerodendron, Euphorbia, &c., that have been cut down and are now breaking, should be shaken out and repotted in good turfy fibrous loam, with a mixture of coarse sand and a good portion of charcoal, in which these plants delight. Continue to increase the heat and humidity for the Orchids, and see that plants of Dendrobiums, Gongoras, Stanhopeas, and some others that are now making their season's growth, are not suffering for want of water. It is sometimes found of advantage to soak them in a tub of warm water. Syringe carefully about the blocks and baskets that have plants of Vandas, Saccolabiums, Sarcanthuses, &c., growing in them. Prick off carefully into small pots the various kinds of Achimenes as they make their appearance in the store-pots or pans, and put in another batch of Gloxinias, to be treated in a similar manner. They delight in moderate bottom heat at this season.

GREENHOUSE AND CONSERVATORY.

If cold easterly or north-easterly winds continue to prevail great care is necessary in the admission of air, as there is great difference between these harsh cuttings winds and the soft, quiet, gloomy weather that we have lately experienced. The different kinds of New Holland and other plants—viz., Acacia, Eutaxia, Virgilia, Templetonia, Brugmansia, Nerium, Laurus Camphora, the varieties of Cactus, and others that have been at rest in the greenhouse for some time should be carefully looked over to see if the drainage is correct and the surface soil in proper condition, and that no plant becomes unsightly for want of water; pruning back or stopping with the finger and thumb. Previous directions to be followed up in the conservatory, placing every plant to the best advantage and clear from its neighbours; keeping well in view the judicious arrangement of colours. The creepers to be kept pruned and nicely trained, with the pathways mopped dry early in the morning, that no complaints of unpleasant dampness to the feet may arise.

FORCING-PIT.

Introduce fresh plants for succession as fast as others are removed to the conservatory. Pinks which have trussed-up will be better in a milder heat, and Lily of the Valley should be removed to a lower temperature as soon as the first flowers are open.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

TRENCHED, turned over trenches, laid Box in fine days, turned out the bottom of Celery-beds in trenching, so as to scatter the dung equally from the bottom of the trench, making the ridges in such case across the ground. Planted a few more Cabbages from the autumn sowing in succession, to succeed those which were planted out in the autumn. Transplanted some Onions that were sown in the middle of September, to get forward early large bulbs for use. Sowed a few Radishes, planted a few Potatoes as the ground was dry, and prepared by digging and turning for getting the soil into order for general crops of Onions, Carrots, &c. Potted Cucumbers into good-sized pots to keep them as yet in little room, and filled another box with Asparagus-roots, the first now showing signs of distress. Placed more Rhubarb in the Mushroom-house. Swept over the beds with a hair-broom, and spawned another small bed, wrapping each piece of spawn in a handful of dry short litter as the manure was wet enough.

FRUIT GARDEN.

Forked over slightly among rows of Strawberries, just to break and a little more the rough lumps of dung and leaf mould. Will give no dressing to the rows in the shape of removing old leaves, &c., until gentle April comes at soonest, and frequently give no such dressing whatever, as when the plants begin to come vigorously the fresh growth soon covers all the old, and there is no chance of fine strong buds being broken off by a careless hand, or a more mischievous rake—a tool by-the-by, which unless for specific purposes, should generally be under lock and key. Pruned, fastened, and painted Apricots, Peaches, &c., as opportunity offered. Did the same with Currants, Gooseberries, and Pears, and will finish with Apples. We have given over pruning Gooseberries early, on account of birds devouring the buds. Last year they made havock even with Apple-buds, and this season they have commenced with Pear-buds. Daubing them over with a paint of soot, lime, clay, and cowdung in about equal proportions, and soapsuds as the water. It is so far a preservative that the delicacy of the morsel is for a time destroyed.

No one likes *birds* better than I do, and though we shoot at times, I neither care for the job nor for the noise the discharge makes in a garden. We have used, however, what is not much better—several windmills that kept up almost a constant clatter, and which kept the feathered gentry away until they got used to them. What with high game keeping in cultivated and woody districts, where a boy runs the chance of being locked-up if he should peep into a hedge for a sparrow's nest, there is a growing danger that the birds will have more than their own share of garden produce, and it is more vexing to see them clearing a tree of buds than taking their own fair share of the fruit when it comes. The pretty tomtit is about the greatest rascal, though not bad to poison when that is put into pieces of suet; but, then cats too may eat it. If things go on in the same way much longer, we shall be compelled to cultivate our hardy fruit on low bushes or pyramids, so that by net and otherwise we may protect buds as well as fruit, and let the birds have only their right share.

Examined *Strawberries* in houses, cleaned them of all decayed leaves, saw there were no wormcasts in the pots, and top-dressed the surface with rich compost. Extra damp is ruinous in this dull weather and encourages attacks of green fly, which soon destroy the buds when pushing, and injures the fruit when ripening, and the flowers when setting. When the truss is throwing-up and a few appear, then there is nothing like the "Weaver" plan, "Catching and killing them"—in other words, bring the fingers and thumb in contact with them, and the slightest touch will destroy them; and then lay the pots down, and as they are turned over syringe them well with soot and lime water, rendered clear by standing long enough. When farther advanced a little may still be done with the fingers; but the great resource is tobacco smoke, presented cool and not too strong at a time. Tobacco, however, is no joke when much is wanted, and hence the importance of these preliminaries, and if not attended to until the plants are a living mass of insects, it is best to save the tobacco and throw away the plants at once. Potted *pyramidal Cherry trees* that have a fair supply of fruit-buds on them, and which had been sent in a bundle without any earth, the roots merely being wrapped in damp litter. The soil used, therefore, was rather dry, in order to get it in nicely among the roots, and these were placed so as to fill the pot pretty regularly, and the soil squeezed tight about them with the fingers and a blunt piece of wood. The trees were then painted, to smother-up all insects' eggs, and the pots plunged out of doors into a heap of leaves, so that encouragement may be given to start the roots at once, whilst the buds will be kept back by open exposure, or even shaded from the sun if necessary, the intention being, if possible, to take these plants ultimately under glass, and get fruit from them before it can be obtained in the open air. By such a process we have had Vines in pots, well supplied with fresh spongioles, before a bud began to swell; and even now there is a pot in a heap of leaves with part of a pruned-off stem in it, and a few buds exposed, showing in the open air no signs of moving, whilst roots 6 inches long and as white as milk are formed in the pot. So much for the root-and-leaf theory, showing that though for continual health there must be reciprocal action, yet to a certain extent, and for a definite purpose, the roots and buds can be separately excited into action. In the case of all fruiting trees in pots, we advocate fruiting them in these pots, in which the ball is full of roots, without shifting or repotting before the fruit is obtained; but to this there may be exceptions at times—such, for instance, as when the pot is very small for the head. In this case we would gently disengage the roots outside of the ball, place in the larger pot, and having secured the roots make the soil as firm as possible; and if it can be done, as in the case of a Peach, that a mild heat out of doors can be presented to the roots, so as to encourage rooting in the fresh soil, before the buds swell and expand, there will be little risk of the buds dropping from the change. Again, when trees with fruit-buds are obtained without balls, and it is desired to get them to fruit under glass, the extra heat at the roots, whilst the tops are cool, will be an advantage; because by the time the buds break, there will at once be a reciprocal action. With such exceptions, most fruiting plants in pots, from a Strawberry to a Vine, will do best in the pots that were full of roots the preceding autumn.

Turfed in fine days, swept and rolled walks, lawns, and attended to flowers; propagating and cold pits much as last week.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Gay Border-plants (*An Inexperienced Amateur*).—The best three bedding Scarlet Geraniums are Punch, Crystal Palace Scarlet, and Tom Thumb. The best three Variegated Geraniums are Alma, Bijou, and probably Flower of the Day, all things considered. The best three Calceolarias are aurea floribunda; integrifolia grandifolia, the one mainly used at the Crystal Palace, and Gaines' Improved Seedling of the same. The best three Verbenas are Robinson's Scarlet Defiance, Purple King, and Mrs. Holford, white. One thousand plants of each of these three Verbenas are planted out in beds all over the three kingdoms, for every one that is planted out of any other kind of Verbena, and it is from that fact that our selection is made, for of ourselves we have no particular choice or favourite in any of these classes, we merely echo the judgments expressed in the public gardens round London. But Mr. Gaines' Calceolaria being a new one to most people, we refer to our report of it last autumn from the Crystal Palace, where it made, most certainly, by far the best bed of Calceolarias we have ever looked upon.

lower-garden Plan (*H. C.*).—Nos. 1, 2, and 3 good; 7 must be exactly the same as 2, being the match to it; 5 good also, but 4 not good, as Gazania looks better there without an edging. White border to 2, 4, 7, 14, and 17 very good. The rest seem quite correct, and 8, 9, particularly good, though seldom seen. The row of circles under the "span-roofed" bank is [illegible] more artistic than a border would be there; a ribbon-border there would be simply ridiculous, and a mixed border something more. You must have had [illegible] labour and thought to lay out such a situation so well.

[illegible] of Jacobæa Lily (*A Working Man*).—The Jacobæa Lily is Sprekelia formosissima. It is grown the year round exactly like Regent Potatoes in some places, and it [illegible] the best of any way; but there are many ways of treating it, and [illegible] the ways it can be had in bloom from January to the middle of May [illegible] by lifting it w[illegible] late Potatoes i[illegible] [illegible] out full 4 inches deep at, and after the middle of April, it blooms naturally about the middle of May. The same treatment as for forced Hyacinths will give the spring succession, and by keeping it always in pots the greenhouse bloom is generally over before April is out. It is more easy to do than any of the late kinds of Potatoes. We can form no idea of what your scarlet Cape Lily, or Amaryllis can be; there are scores of bulbs would answer your description.

Gas Stove in a Vinery (*D. P. Bell*).—A gas stove may be used in any fruit or plant-house without any injury to their occupants, if a tube is so fitted to the stove as to convey away into the exterior air all the gas formed by burning the coal gas. We used one for some years in a small vinery, without any injury to the Vines or other inconvenience. The stove was at one end of the vinery, and the tube, or chimney, rose perpendicularly from the top of the stove, and when near the roof turned at a right angle, passed along the whole length of the vinery, and communicated with the open air through the end of the house.

Peaches and Nectarines in Greenhouse (*Dorset*).—Peach and Nectarine trees will do very well on the back wall of a greenhouse, provided you do not shade the trees with plants, and you do not keep the house above 40° in winter. If you had bearing trees there you might ripen that crop in a way, but if you also grew Melons on the roof of the house in summer, we would not give much for your Peach trees the year following. Wash and soak your Vine stems now in a paint consisting of clay and sulphur, and when you give fire heat place sulphur on the heating medium, provided that is not hotter than 150°; where it touches the sulphur 130° would be better.

Queen Anne's Pocket Melon (*Idem*).—The Pocket Melon is more pretty than useful; however, some people like it, and it looks nice on the table four or five in a dish. The thriving on ridges and against walls in the open air, depends more on practical skill and the season than on mere formal directions. Most Melons would have so ripened last summer in Dorset, we presume; but it was a summer amongst summers, at least with us a little north of London, though in many parts the dull weather and the rains would have settled Melons out of doors, as they did even Cucumbers. If resolved to try, we would advise having the ridge near to a wall or other fence, facing the south; give the plants but limited space to grow in, stop the plant when young, train to one stem, get the stem as soon as may be to the wall, train it a yard or 4 feet there, nip out the buds at the axils of the leaves, leave half a dozen at the top after shortening the shoot by nipping out its point, and the side-shoots from these buds left will most likely show fruit, which treat in the usual way. You are, however, more likely to succeed in the greenhouse. For this purpose sow in a hotbed, or a warm place, about the middle of April, pot singly in small pots when up, keep potting as needed, and stop and train as above, and by the beginning or middle of June the plants should be planted singly in 13-inch pots, using good loam for the purpose. These place in the house, and keep it at 60° at night, and provided air is given early, it may rise to 75° to 85° or more during the day. The stopping, &c., is on the principle that the Melon shows most freely on the third succession of shoots. There is not a Melon in all the list of our advertisers, but may thus be grown successfully; but remember, that for the time being, the greenhouse is turned into a hothouse. Thousands of places for keeping bedding plants in winter are thus turned into tropical houses every summer. When growing freely give plenty of moisture, as you would do for Cucumbers; but keep rather dry when the plants are in bloom. Give more moisture and plenty of air when swelling, and keep the house rather dry as the fruit begins to ripen. If trained to the roof, you will need a net or some contrivance to prevent the fruit falling off when it is nearly ripe. Not long since fuller details were given.

New Fuchsias (*B. G. Herrmann*).—Your German friend, and many of our readers both here and abroad, are under a misapprehension on the subject of new seedlings coming "out" annually. Nobody but the owners of them can possibly know anything about them until they come out, unless they, the seedlings, have been exhibited before some competent judges. All that we know, therefore, of the new Fuchsias of the coming season, can only be from what we know of what the Floral Committee of the Royal Horticultural Society thought of them, that being now a recognised court of awards to seedlings about London, and as far as we can recollect, the following were the only three of the coming race which obtained first-class certificates from the Committee:—*Minnie Banks*, as the best white; *Comet*, as the best red; and *Mammoth*, as the best double Fuchsia.

Royal Horticultural Society (——).—We answered a similar question last week. Write to Mr. Murray, Assistant Secretary, Royal Horticultural Society's Office, Kensington Gore.

Seedling Cineraria (*W., and W.——B.*).—Nothing novel, and petals are deeply notched.

Liquid Manure (*Ignoramus*).—Whether all the trees, &c., named by you will bear "a liberal supply" of house sewage, depends in a great measure upon the soil, drainage, &c. The Pampas Grass and herbaceous perennials you could not well injure by an abundant supply. The others would require moderation.

Planting a Geometrical Garden (*S. E. L.*).—Your planting is exquisitely good. Your regret at not being able to put more colours in, is the greatest praise you could give to the little plan. It is, often, by attempting more than the law allows that flower gardens are made vulgarised eyesores.

Fitting-up a Greenhouse or Conservatory (*Ignoramus*).—For a greenhouse, except having a narrower shelf in front, you could scarcely do better than adopt some modification of the section shown at page 394. Or you might have a small border at the back for climbers with a shelf over it, a walk of 2½ feet or 3 feet all round and a flat platform in the centre, or one raised in the centre and falling to each side. For a conservatory properly speaking, you could substitute a bed of earth instead of a stage. You do not give us height of back or front, nor yet what you would especially like. For varied purposes the stage or platform would be best. In a large house great variety of stages and platforms may be introduced; but for a length of 21 feet the simpler the arrangement the better.

Lamp for a Waltonian Case (*J. H.*).—There is no lamp so good or more simple than the one which Mr. Walton himself uses, and which we described long since. The original lamp and the first Waltonian Case ever described are now at full work in Mr. Walton's own garden at Surbiton, and nothing yet has answered better. But Mr. West used common street gas through a small flexible tube [illegible] Waltonian Case, which stood in his and that seemed to us the most simple and safest way, and where gas obtained we would never use anything else for the Waltonian. But s is laid on at the front and the back of Mr. Walton's garden, yet he ve none of it, and never finds any trouble in trimming the lamp, the gardener looks to.

s, **Cloves, Picotees, and Carnations** (*J. N.*).—These are all hardy , but the kinds in most demand are so refined in their requirements e very best thing that we can do for such of our readers as do not tand anything at all about Cloveworts is to keep the names entirely sight, and advise them to begin with common border flowers of each om some one who supplies the open market. Ask for common double f three kinds of colours, also the old dark double Clove, the best of all ily, the flesh-coloured Clove, and the plain red; then three kinds of Picotees, and three kinds of border Carnations.

es of Cyclamens (*A. Rawson*).—Many thanks for a sight of leaves different from the usual forms. No. 1, europæum, was never seen longer leaf; nor, so far as we know, a persicum, No. 3, with such to the leaf. But No. 2, a true neapolitanum, is farther from all the nt forms which the varieties of it produce than either of the others; f being more in the form of those of the European Asarum than that Cyclamen, besides being regularly toothed all round the edges. epartures from the normal forms show how little faith can be placed descriptions of Cyclamens from the form of their leaves.

s under a Glass (*Querist*).—Nothing more is required than to lift glass once daily to admit fresh air, and put it on again directly; to e soil damp, not wet; to have the case in a moderately warm room, ways shaded from sunshine. All the species you mention are hardy .

Ailanthus Silkworm (*A. J.*).—If you apply to Mr. McGhee, Tyne ford, Essex, he will supply you with eggs, and plants also. No other ll do well. Lady Dorothy Nevill's pamphlet on the Ailanthus worm ready by the end of the month.

LTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

4th and 15th. Taunton and Somerset. *Sec.*, Charles Ballance, Taunton.

'th, 28th and 29th. Bath and West of England (City of Wells). *ard*, S. Pitman, Esq., Manor House, Taunton. Entries close May 1.

th and 5th. Beverley and East Riding. *Sec.*, Mr. Harry Adams.

SHELTER FOR FOWLS.

T recovering from a severe attack of influenza, and saunter- ong perished with easterly wind, in that happy frame of which now and then occurs when a man really will quarrel ith his bread and butter, we thought all at once of our and wondered we did not see them. We turned to their haunts, but not one was visible there. We did not seek The bitter cutting wind met us in our teeth, got into our penetrated our clothes, took the measure of our waists las! the thickest part of our body), and at last fairly blew nd. "Cannot face it," said we to ourselves. "Nor can wls," said Common Sense. "Much warmer this way," e, when the wind was in our back, "So it must be for the ' Thus we got to imagine fowls thought as we did of the r, and, above all, of these miserable winds we may expect without intermission for two months. As our minds busy, our miseries disappeared, and we set to work with o discover the tenants of our yard. We had not much ty in finding them. Wherever there was a shelter, there owls enjoying it. We have two yards, but only one es a shed, and, like many more, we do not care to incur ense of erecting one in the other. We, therefore, sought stitutes, and succeeded as follows:—On the open space forms our run we have placed a number of thatched supported in a slanting position by a prop. They have a success. They are very inexpensive, clean, and by no eyesores. They are useful in the garden when the fowls require them, and any ordinary labourer can make them. ve adopted them, much sneezing and cold have disap- from our yards. It is unquestionable that with fowls as man beings, sharp easterly winds are injurious to health, t every effort should be used to neutralise their effects. his view all openings to the east should be carefully closed, ly at night. The quantity and quality of food may both eased, and a little stimulant given with advantage at The surface of the earth supplies no food, and there is sposition to seek it. When it can be done, it is well to en the doors of stables, wood-houses, empty barns, and gs of all kinds. The birds will use them for shelter.

should be taken to turn the faces of the rips in which e confined with chickens strictly to the west, and if the hinder part has any crack, or does not fit close, let it be covered with an old sack or something of the sort. The hurdles we have mentioned are about 7 feet in length, and 4 feet in width.

HALIFAX POULTRY SHOW.

The Judges were Mr. Foulds, Chowbent, near Preston; Mr. T. J. Charlton, Stanley, near Wakefield; and Mr. Challoner, Whitwell, Chesterfield. The following were their awards:—

Game (Black-breasted Reds).—First, J. Fletcher, Manchester. Second, J. Dodds, Ovenden.

Game (Brown-breasted Reds).—Silver Cup, First, and Third, J. Fletcher, Manchester. Second, W. Windle, Padeham.

Game (any other variety).—First, J. Fell, Adwalton. Second, J. Hodgson, Bradford. Third, H. Mason, Driglington.

Game Hens.—First and Second, J. Firth, Halifax. Third, T. Dodds, Ovenden.

Hamburgh (Gold and Silver-spangled).—First and Special Prize, G. R. Tate, Driffield. Second, H. Beldon, Bradford. Third, J. Craven, Clayton.

Hamburgh (Gold and Silver-pencilled).—First, F. Hardy, Bradford. Second, H. Beldon, Bradford. Third, R. Hemingway, Shelf.

SWEEPSTAKES.

Game Cockerels.—First, A. Aykroyd, Darlington. Second and Third, J. Fletcher, Manchester.

Dorkings.—First, R. M. Stark, Hull. Second, T. W. Hill, Heywood Third, H. Crossley, Halifax.

Cochins.—First, T. Stretch, Liverpool. Second and Third, W. Holland, Lightcliffe.

Spanish.—Prize, E. Brown, Sheffield.

Any other Variety.—First, Second, and Third. F. Hardy, Bradford.

Bantams (Game).—First, J. Crossland, jun., Wakefield. Second, C. W. Brierley, Rochdale. Third, L. J. Crossley, Halifax.

Extra Stock.—First and Third. T. Dodds, Ovenden (Brown Red Game and Black Red Game). Second, W. Irvine, Ovenden (three Cochin-China hens).

CHIEF POINTS IN GOLDEN-SPANGLED HAMBURGH COCK.

Which is considered the chief point in a Gold-spangled Hamburgh cock? Would you prefer first-rate ears and a black breast, or medium ears and a spangled breast? Does a hollow in the centre of the comb take from the bird's value, and would the judges take any notice of it?—Amateur.

[Much would depend on the judges. Yorkshiremen love a black breast; others detest it. A blush on the deaf ear is a serious defect, in our opinion a black breast is a greater; and a hollow in the centre of the comb is almost a disqualification, because all people and all counties unite in condemning it. If such defects as you have named are found in first-prizetakers, their position must be due to the fact that in a nation of blind a one-eyed man is king.]

LOOSE CROP IN FOWLS.

I have a Dorking hen that has an enlarged crop containing a thick fluid, which runs out of her mouth when held up by the legs, and has a very disagreeable smell. She seems quite healthy in other respects, and takes her food as usual. Would you inform me what the disease is, and if there is any remedy for it? —An Old Subscriber.

[Every fowl after drinking will return the fluid from the crop through the mouth if held up by the legs. But from the hanging of the crop and the unpleasant odour, this is a case of disease, and is known among old poultry wives as "loose crop." If she is put where she can get at no water, and is only allowed to sip a little three or four times per day, she will recover. The crop will not become less while she has as much water as she likes.]

THE CANARY AND THE BRITISH FINCHES.

(*Continued from page* 447.)

REARING AND TEACHING.

When the hen feeds her young ones attentively, and is assisted by her mate, but little trouble is experienced in rearing them. Although some male birds are mischievous and require to be removed while the hens are sitting and rearing their young, yet the majority will help to feed them, and many cocks will do the greater part: indeed, cocks when they have once reared young will frequently feed all that cry to them. I have at present a Linnet which was taken from the nest and put in a cage with an old cock Canary, which fed it and brought it up without any other assistance than supplying it with proper food.

This food consists of hard-boiled eggs chopped up shell and all, with crumbled bread and mawseed; also, a plentiful supply of fresh green meat, as chickweed, groundsel, seedy shepherd's-purse, and the spikes of plantain when the seed is tolerably forward.

Here, perhaps, is a good place to give a caution respecting cleanliness, for the greater number of failures arise from the presence of mites—a small species of bug which hides in the crevices of the cage and in the nest. They sadly torment the old birds, especially the sitting hen, as they increase in multitudes during incubation, and either drive the hen from her nest or much debilitate her, though more commonly they completely suck the existence out of the young.

As a preventive, I would advise the previous examination of the breeding-cage, and if any appearance of mouldiness or minute white specks of a floury appearance are perceptible about the cracks or joints, either at once to discard the cage or thoroughly clean it, then oil all the crevices to saturation, and fill them up with flowers of sulphur.

Some fanciers have advised the use of the Persian insect-destroying powder, but I have no experience of its effect. My practice has been to give the hen a clean nest, when she sat to sprinkle some flowers of sulphur in the nest, which I have generally found to be efficacious.

In the rearing of Mules from birds of a different nature from Canaries, attention must be paid to diet, to supply the old ones with food more adapted to the habits of the young. As regards the Bullfinch, it should be borne in mind that he is strictly a vegetarian, though, perhaps, from his fondness for the kernels or seeds of berries, blanched or broken almonds would be found an acceptable addition to their bill of fare, as well as grocers' currants.

If an attempt is made to breed from the Sparrow, he being omnivorous, the addition of bread and milk or unsalted cheese might be advantageous. While the Chaffinch and Yellow Hammer eat no green food, and I believe it is very injurious to their young—indeed, in a wild state they rarely touch even seed if they can procure insects: consequently, they would require instead of green meat, such things as sweet milk curds, unsalted cheese, &c., to rear the young on. If it were possible to induce their parents or nurses to eat mealworms, these would, perhaps, prove the more natural food. This subject of proper food is one of the great obstacles in rearing Mules from these birds which induced me to offer these remarks.

When the young birds can feed themselves they should be removed from the old ones and placed in a cage by themselves, still supplying them for a time with the soft food until they are well able to eat seeds.

Some fanciers who pay much attention to plumage, have large cages made expressly for the young birds. These are closed all round except the front, which is of close wirework, the back and sides being studded with short perches just long enough for one bird to sit comfortably on at a time, which prevents their pecking each other and pulling out their feathers. Care must be taken at the same time to so arrange these rests, or perches, that when any bird sits on a lower one his plumage is not liable to be soiled by one above.

In respect to teaching or instructing the young birds in song, it is a common practice to keep a cock or two which are good singers and whose song and execution are admired, and from hearing which the young birds take their notes. But if it is desired to teach them any particular song, the notes of other birds, or to pipe a tune, then much care becomes requisite to remove them very early from hearing any other singing birds cept those they are to learn from.

The song of the Canary bears much resemblance to that of Titlark (*Anthus arboreus* or Tree Pipit of some naturalists), th some notes resembling the Skylark, and a few of the harsher es of the Nightingale. So strong is the resemblance, that me persons have been led to believe that the Canary had note of its own, and that its common song was really so mposed and the effect of education. This is, however, a mis-ken notion, the bird having the same song in its native wilds; , like many other birds, varying to a certain extent this ural song, it is reasonable to believe it best adapted to their cal organs, and they learn it more readily and sing it more llingly than any othe[illegible] One instance [illegible] explain this latter [illegible] habit of buying Nightingales, had a Canary with which he had taken much pains and which sung the Nightingale's note to perfection. A gentleman had a young Mule which he wished the man to instruct for him in the Nightingale's song, which the man agreed to do provided the said Mule was sufficiently young and had no song of its own. The bird was sent and placed in the hearing of its instructors; but, what was the man's vexation the next morning to hear his favourite Canary singing the Canaries' song, which he had learned from the imperfect recording of the Mule (the first attempts of a young bird to sing are termed by fanciers recording), and which it now performed in preference to the less natural notes of the Nightingale. This anecdote will forcibly illustrate the necessity of placing such birds that are to be taught a particular song where they cannot by any chance hear their natural song. On this account the more successful rearers of singing-birds prefer removing them from their parents quite young and bringing them up by hand.

There is much variety in the song of various Canaries, particularly in the length of time they sustain certain notes, the number and variety as well as the power and clearness of the voice, though the song of all bears a family likeness.

Young Grey Linnets are often taken from the nest and reared by hand with much care. They are sometimes taught the Woodlark's notes—a song which is much admired among fanciers; the Woodlark being a bird not generally successfully kept in confinement, whereas the Linnet is a much hardier musician, and will sing the plaintive melody of the Woodlark tolerably well. Many, too, are taught selected songs of their own species, an account of which I copy, with permission, from Mr. Hipkin's description:—

"SONG BIRD AND BATTLING LINNETS.—Linnets are said by bird fanciers to possess certain properties of song, which are thus denominated:—Weeting, chowing (rough and mellow), feering, laughing, piping, rattling, scriggling, wying, and whisking. The bird that sings sweetest is said to do his song in the finest key, and, if he goes through his song without stopping, to lead and finish well. If he begins imperfectly, or stops in his song, it is termed a bad lead or finish. The birds are distinguished by the terms battling birds and song birds; the former, from singing matches, and being continually carried about to rooms where birds of a similar character are brought, become lavish and hurried in their song. The latter (which are better fitted to teach young birds, and are principally kept for that purpose) are said to keep good time, and are noted for the beauty of their song; and I may mention that a song-bird Linnet, the property of Mr. R. Moody, was lately sold for £10. I now proceed to the detail of song—the jerks. Of these, of course, I can only give a portion, and those the most approved at the time I went to hear matches sung. The following are the names of a few sung by the best birds:—*Tollic tollic chay, ic ic quake aweet; lug lug orch aweet; ter weet, &c.; tollic chou, ic ic quake chou; egip egip pipe chou; ogip egip poi; tuc tuc feer; tuc tuc vizzy;* and a very rare old song, *au au chay chawisk*. Some birds do an objectionable song called the donkey, *ic au jab;* and some, after finishing with a jerk, end with *chite chite chite*. This, with good fanciers, would, notwithstanding that they did plenty of 'toys' (a term for good song), cause them to be parted with as cast-offs, lest they should spoil their nestlings, branchers, and young Linnet Mules; they were, however, readily bought for battling birds, in which this defect of song was often passed over, provided they were spirited birds. I may just mention here the Linnet's calls, as they are sometimes named at the commencement or during the song. *Tollic*, *tollic*, *pew* and *poi*, and the chuckle; they are so plain that any one who has once noticed them would immediately recognise them.

"The acquired song of the Linnet was obtained by the old fanciers by the selection of the best birds that could be found and the introduction of certain other birds, such as the Titlark, and some say the Wren, as teachers. Thus by degrees, and by means of nestlings, which blended portions of the songs of stranger birds with their own, certain properties of song became adopted which did not belong to the Linnet naturally; but this result was only effected after a long-continued series of experiments, extending over a number of years. Many of the improvements thus introduced have now been lost, owing to various causes, one of which is said to be the purchasing of the best birds by amateurs, who have not cared about preserving the acqui[illegible] song. This removal of the best birds from places where the[illegible] heard had also the effect of discouraging many of the judges, who thereupon ceased to be fanciers; and those who supplied their place have done so with inferior birds, so that our modern specimens would only have been looked upon as cast-offs in days gone by. A few, however, of the old kind of song birds are still to be found—such are those of Mr. Moody, referred to above, but the generality of the fanciers now-a-days are unable to appreciate them, as but few are capable of reading the jerks. Of the birds of the present day it must, however, be said, that if their song is not so sweet as that of the old school, it has, nevertheless, the claim of being the more natural.

"The hybrids or Mules are, in my opinion, the sweetest song birds heard. Like the Woodlark, their notes are flute-like in tone. The greater part of the Mules sold by bird-fanciers sing the Canary's song; but I much prefer those taught by good song-Linnets; and double and even treble the price of the former will be given for the latter.

"Singing a Match.—For the benefit of the amateur and general reader, I will endeavour to describe a match. There are three kinds of matches—'ones and twos,' 'most and best,' and (with song birds sometimes) 'best only.' The match most commonly sung is ones and twos. You will notice in the song I have given above, that it is sometimes separated into two parts—the portion to the comma counting one, and to the semicolon two; but each jerk must be perfect, or not counted. The first business is to select two scorers, who are supposed to be able to read the song of any bird, however fast he may sing—as a good musician does a piece of music played in quick time; and a referee, equally efficient, is also appointed. Having settled the terms of the match and the choice of situation, the birds' cages are hung up at the places selected, and the scorers being seated, each of them prepares to score the points in the song of the bird for which he is engaged, and also to watch that his opponent scores fairly. The referee keeps an eye on both scorers, marks any wrong scoring, and decides every disputed point. He also determines when the time is up, and directs the scorers to stop—an important matter, as one bird may be singing at the time and the other not. He then counts the scores, and declares the winner. The time for singing a match is usually a quarter of an hour. Where the stakes are for a large sum the scorers are, of course, very closely watched."

In Germany, many Bullfinches are taken from the nest and reared by hand. After each feed they are covered over to keep them still and attentive, and a tune which they are desired to learn to pipe is whistled or played to them distinctly once or twice after each meal.

Sometimes a bird-organ is used, but more frequently a small flageolet. Some birds have been taught as many as three tunes; but it is better to have a bird pipe one correctly, than to jumble three in one. It takes a long time and much patience to instruct them, and the owner of a piping Bullfinch should know the air it sings, and be able to whistle or play it over to it a few times after each moult.

The Bullfinch is a very amusing bird, easily tamed and often taught to sit on the finger and fly to the hand to be fed.

The Redpoll and Goldfinch are both occasionally taught to draw their own water, to open a box, or pull up a carriage for their seed. And Canaries and other Finches have been trained to perform many little tricks, as swing on a string, to fire a small cannon, feign death, draw a carriage, and many other little antics.—B. P. Brent.

LOSS OF A LIGURIANISED STOCK.

Since my communication to The Journal of Horticulture relating my successful attempt at Ligurianising my apiary, I have been a passive observer of the numerous articles that have appeared in the Journal since that period; but I have not been the less interested, more especially since the superiority of this (to British apiarians) new species is fully established. Being yet in my minority in this branch of domestic economy—a student, and not a teacher, consequently not in a position to promulgate learned disquisitions upon apiarian science, I thought I should but act with befitting decorum by remaining silent, until I was fairly out of this "Italian wilderness," and could fairly give my opinion pro or con. upon these (which "An Old Friend of the Black Bee" somewhat indecorously designates) "yellow foreign scoundrels."

They are certainly very showy compared with their dusky brethren, and I should say very gallant, from the intimacy which exists between them and the "adjoining establishments." But I am digressing from the "point" now in hand, which is this:—Having been six months in the "wilderness" above referred to, I began to feel somewhat weary of the monotony, so determined upon extricating myself and getting a view of the "peep o' day;" but what was my dismay to find the wintry clouds had totally obscured "that orb"—in other words, my Ligurian queen is numbered with the past, and I am yet in this Italian labyrinth. All appeared to go on well from the date of my article in the Journal until a few days since. More especially in the autumn, I purposely united her unto my weakest hive (albeit it was a good one), and during the autumn I frequently said it was the strongest hive I possessed, so surprisingly they increased. A few days since upon the change of weather, I feared they were not doing well; yesterday being very mild my suspicions were still further confirmed, and I determined upon solving the problem, so I extracted all the bars and nearly all the bees were gone (that is Ligurians), save a few robbers—no queen could I find: consequently, concluded she must have died during the winter. You can imagine my disappointment: I paid them unwearied attention upon every favourable opportunity, and I looked with no ordinary pleasure upon the coming season. Nought remains but to reconcile myself to this vicissitude of fortune, and if circumstances permit to try again, aye, and yet again.—S. Amey.

SUPER-POSING.

After forwarding the remarks on the above subject, which appeared in your last Number, I have seen "A. W.'s" description of the attempted uniting two old common hives with limited communication, and at this advanced period concur in the editorial conclusion that the lower will now become the stock. Had I two such hives as "A. W." describes I should at the end of the season have felt disposed to place the two bottoms together, after the advice of the very old bee-keeper, only driving up at once the inmates of the poorest into the other, or into an empty hive first, and then suddenly precipitate them into the upper, trusting to a much more satisfactory result being effected during the bewilderment consequent on such a proceeding than the prolonged skirmishings after the orthodox North-and-South fashion of the two sections of the apiarian union.

In that case the vacated comb could be turned to a similar good account, as described by me in No. 34, or more recently and fully by that excellent apiarian Mr. S. B. Fox at page 428.

It affords me much pleasure to learn that the "erroneous construction" "A Devonshire Bee-keeper" put upon my meaning "was anything but wilful," and, therefore, most cheerfully do I withdraw the hasty expressions recorded at page 180, and regretted on reading his explanation that such had ever been uttered, and most cordially, therefore, accept his proffered hand over "our little differences," in the hope that any diversity of opinion we may entertain on apiarian matters may never again lead to so disagreeable an interruption.—A Renfrewshire Bee-keeper.

UNITING BEES.

"A Renfrewshire Bee-keeper" having fulfilled his engagement by replying to Mr. Hood's appeal for information on this subject in an able article describing his mode of effecting autumnal unions, I now feel at liberty to keep the quasi-promise which I made in page 140, that I would hereafter explain the mode in which I had at length succeeded in inducing Ligurian and common bees to mingle amicably together.

As Mr. Hood inquires as to the best mode of uniting bees in bar or frame-hives, I will commence by describing the method which I have found the most advisable where both colonies are located in any of these improved hives, and in the same apiary.

Commence by puffing a little smoke under the crown-board, and shifting the combs and bees of the hive, containing what is supposed to be the inferior queen, into an empty box, keeping a sharp look-out for her majesty, and securing her as soon as she is perceived.[*] At the same time those combs destitute of brood, and with the fewest bees adhering to them, should be abstracted, and the bees brushed from their surfaces into the box until the remaining combs are reduced to half their original number. The crown-board may now be replaced (or all the slides pushed in, if the hive be fitted with slides), and the queenless colony allowed to retain its place for the present. Next, let the apiarian perform the same operation on the stock to which the first is to be added, removing, as in the former instance, one-half the combs, but allowing the queen to remain with her bees on the other moiety, which should be placed in the centre of the hive. The space on either side should then be filled-up with the combs and bees from the hive first operated on; stragglers brushed out, and the crown-board placed quickly over all. This operation should be performed in the middle of a fine day, when I have found it uniformly successful.

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[*] She may be kept alive for a few days, in order to provide against an accident, by being placed with about a score of her subjects and a bit of barley-sugar in a small perforated box, or under a wine-glass slightly raised on one side to admit air, and kept in a warm room.

In order to recruit the population of my weakened Ligurian stocks and numerous artificial swarms of the same species, I last autumn collected all the condemned bees of the common species which I could meet with within a radius of five miles of my apiary, and having removed their queens, I, in the first few instances, introduced them to my Italian colonies* in the manner described in pages 45 and 46 of "Bee-keeping for the Many." I soon found, however, that this plan was altogether a failure † when applied to different species of bees, and am indebted to Mr. Langstroth, the American apiarian, and to my friend Mr. S. B. Fox, for hints which have resulted in such perfect success that I now take no thought for the safety of the Ligurian queen, beyond removing her adversary before introducing bees of the ordinary species.

My most recent and successful plan is to bring home my driven or "beat-out" bees, as they are termed by our Renfrewshire friend, in a common hive tied-up in a cloth, and being put in a dark place they are there left until the middle of the next day, when a little smoke is blown under the crown-board of the Ligurian stock to which they are to be united, after which it is removed and the hive temporarily deepened by a square frame, 1 inch to 1½ inch in depth, placed upon it. The bars and interstices between them having been liberally sprinkled with sugared water ‡ scented with peppermint, the straw hive is turned up, and the cluster of common bees, having been saluted with a few puffs of smoke and liberally sprinkled with the aforesaid mixture, are knocked out upon the exposed bars of the Italian stock. All that now remains to be done is to replace the crown-board as rapidly as possible, and the next day the square frame may be removed, when a peaceful union will be found to be the result.—A Devonshire Bee-keeper.

RAPID MULTIPLICATION OF LIGURIAN STOCKS.

I received last summer from our worthy friend, "A Devonshire Bee-keeper," a stock of Ligurian bees and one queen. From the stock I had a late swarm, which leaves me at the present time in possession of three good strong stocks.

Reading a statement in the Journal of Horticulture from S. B. Fox, of one of the hives in the possession of "A Devonshire Bee-keeper," that nine artificial swarms were created. Would either Mr. Fox or "A Devonshire Bee-keeper" be so kind as to state what period elapsed between the taking out of each comb; and, whether the bar was replaced with an empty comb each time, or was it only the bees upon the comb and brood in this single comb that were taken from the hive that formed a new colony, or were other bees added from another source?

I should also feel glad to hear their opinion, knowing their great experience in these matters. Would it be a safe plan to take a strong hive of the common bees and remove it some distance from its regular stand, then to take an empty hive and put into it one comb with brood and bees from one of my Ligurian stocks and place it on the stand where the common bees stood, so that the bees or part of them would return to their regular situation, and by that means strengthen the Ligurians? Would the common bees enter the hive and join the Ligurians? and in every case would an artificial queen be created?—A Yorkshire Bee-keeper.

[The dates of the nine artificial swarms referred to were given in page 97. In the eight first swarms, bees only were taken from the parent stock on the days indicated, brood being supplied from other hives; but quite an equal number of brood-combs were removed at different times, their places being supplied by empty combs.

The presence of drones of the common species is the great obstacle to the success of the plan you describe, always supposing that the Ligurians are to be kept pure. We have tried to exclude them by means of a drone-stopper, but this is so great a hindrance to the entrance of the workers, that the results have been far from satisfactory to—A Devonshire Bee-keeper.]

BEES DYING FROM DYSENTERY.

I have lost two of my best hives, and my neighbour has lost one of his best hives in a very mysterious way, as follows:—They were in common straw hives, and have been kept quite dry all winter, and although they have now each of them at least 20 lbs. of honey in them, the bees have all died. They all had queens; but the inside of the part of the hive where they were was very dirty, from the fact of the bees having made their dirt on the part of the combs where they were. They have been supplied several times with clean floor-boards, but to no use. Of course the bees have not been kept up—that is, confined during the winter. My bees have a north aspect, and my neighbour's an east aspect.—A Constant Subscriber.

[Dysentery was probably the immediate cause of the loss of these three stocks. It appears pretty certain that this disease arises from confinement in a damp and vitiated atmosphere. We believe the best preventive is to be found in adequate external protection, coupled with moderate ventilation during winter.]

OUR LETTER BOX.

Breeding Large Ducks (*A Constant Subscriber*).—It is always better to put your Duck's eggs under hens; but doing so would be of little avail unless they were kept from the water. It is for this reason principally the hen is the better mother. The Duck drags her young about while they are too small and weak. She takes them under beetling banks, and among tangled briars; their little strength is exhausted, and they perish. The large Ducks that are shown seldom see water, beyond the necessary quantity to wash in. Let a hen sit on Ducks' eggs in an old pigstye, or any shed where there is no water; and for three weeks after she has hatched let there only be a shallow vessel of water, not more than 1 inch deep. Feed on oatmeal curd, grass, gravel, tallow-chandler's greaves, and any scraps.

Fowls Pecking each other (*H. A. H.*).—All fowls will peck at a raw place, and all birds become carnivorous at the sight of raw flesh. This feeling is often fostered by meat-feeding. The Spanish seldom pick the cock's face, unless there is a spot or discoloration to induce them to do so; having tasted, they go on. But it is often caused by a bad state of body, and an entire change of food is the remedy. Fowls entirely debarred from green food, will seek for flesh as a substitute. If the laceration is extensive sew it up, there will be no scar. Let the cock be with the hens for an hour every day, and let him be watched that the hens do not damage his face. This is more than is required for breeding purposes.

Crève Cœur Fowls (*A Working Man*).—As a generally useful fowl we consider the Crève Cœur far superior to the Golden-spangled, or any other Hamburgh. It is a bulky, crested fowl; plumage black, with a bronzy lustre on the neck and long feathers. The pullets make very early table birds. The hens are good layers and the eggs are large, but they are rarely broody.

Feeding Young Canaries (*A Subscriber*).—The food for the old birds to feed their young on may consist of a mixture of hard-boiled egg, maw-seed, grits or shelled oats, and bread crumb, provided there is no alum in it.—B. P. B.

Cats (*E. L. E.*).—The book you allude to is "The Cat, its History and Diseases. By the Hon. Lady Cust." It is published by Groombridge and Sons, Paternoster Row.

LONDON MARKETS.—March 3.

POULTRY.

The market begins to assume a clear look. Game has disappeared; Poultry becomes scarcer; and many of the fowls show the laying season has either commenced or is about to do so. Ducklings and green Geese come in scantily.

Each—	s.	d.		s.	d
Turkeys	0	0	to	0	0
Fowls	4	0	,,	4	6
Smaller do.	3	0	,,	3	6
Chickens	2	6	,,	[illegible]	0
Ducklings	3	6	,,	[illegible]	[illegible]
Goslings	6	0	,,	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Each—	s.	d.		s.	d.
Grouse	0	0	to	0	0
Pheasants	0	0	,,	0	[illegible]
Partridges	0	0	,,	0	0
Pigeons	0	9	,,	0	10
Hares	0	0	,,	0	[illegible]
Rabbits	1	4	,,	1	5
Wil	0	8	,,	0	[illegible]

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* The Ligurian queen was in each instance secured until the next day in a small box over an orifice in the top of her own hive, from which she was separated by a divider of perforated zinc.

† It always resulted in an immense slaughter, and sometimes, notwithstanding all my precautions, in the death of the Italian sovereign.

‡ I do not participate in the objections to this process which are entertained by "A Renfrewshire Bee-keeper," as I find bees [illegible] lick them [illegible] combs quite dry [illegible] its application.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	MARCH 11—17, 1862.	Weather near London in 1861.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
11	Tu	Chorozema flava.	29.311—29.270	49—37	W.	·14	26 af 6	55 af 5	51 3	11	10 14	70
12	W	Ember Week.	29.391—29.314	49—33	N.W.	.08	23 6	57 5	21 4	12	9 57	71
13	Th	Chorozema varia.	30.100—29.649	51—21	N.	—	21 6	58 5	44 4	13	9 41	72
14	F	Chorozema angustifolia.	30.233—30.114	55—40	W.	·02	19 6	VI	5 5	14	9 24	73
15	S	Cantua dependens.	30.088—30.035	55—24	N.W.	—	17 6	2 4	26 5	15	9 7	74
16	Sun	2 Sunday in Lent.	29.978—29.853	49—29	S.W.	·11	14 6	4 4	rises	○	8 49	75
17	M	Cantua bicolor.	29.890—29.338	47—30	S.W.	·37	12 6	5 4	27 a 8	17	8 32	76

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 50.7° and 34.2° respectively. The greatest heat, 67°, occurred on the 12th in 1841; and the lowest cold, 17°, on the 17th in 1845. During the period 143 days were fine, and on 102 rain fell.

COCOA-NUT FIBRE REFUSE.

WITHOUT intending it I may have brought injury to some one; and I take the earliest opportunity of correcting an error, which I often committed by mistake, and I give it this prominency to atone for my seeming unfairness.

The good clergyman below Bristol, who first made known through this Journal the value of the cocoa-nut fibre refuse for Ferns and bulbs, tells me, in a letter just received, that he thinks that the writer at page 434 and your humble servant on cocoa-nut fibre refuse are both under a slight mistake. "I get mine from Bristol, and yet you have seen it and recognised it as the genuine article. I saw it produced from the crushing or tearing-machine preparatory to making mats and brushes, and so it is not the refuse from their manufacture, though I have no doubt the manufacturers have but one rubbish-heap for all the processes, so that there is a slight mixture of fibre with the sawdust-like stuff. I first saw it used (in Bristol) in the yard of a horse-auction, making a beautiful footing for the horses to exercise on. I at once saw it was too good for that purpose, and then came your article on its uses."

The grand discovery must, therefore, have been made by the clergyman at the same time as it was made in the Experimental Garden; and he deserves the more praise from having seen in his mind's eye how good it must be for various plants, while its goodness was only forced on our attention by the merest accident. The mills for the works were next door to the Experimental, and the stuff was used for mulching flower-garden trees and shrubs as the cheapest material we could obtain or think of. Every inch of the mulching was soon taken possession of by the most healthy roots you ever saw of Deodars, Cedar of Lebanon, and all sorts of Pinuses. That led to its use in planting such trees and such shrubs, which rooted in it faster and more strongly than in leaf mould. That being proved, it was next applied to recover the health of some very old trees which were great favourites, and which it did recover in a very remarkable manner.

There does not seem to be any goodness in the refuse itself, as it were, but being always damp in hot weather, and free as feathers for the roots to run in it, they do take hold of it most greedily, and, of course, they must be new roots.* Our theory was this: Here is a stuff in which new roots come from the most unpromising stumps of old trees; and if you only can induce each tree to make roots at all, surely there will be no difficulty in feeding them from fresh soils and composts.

All this time the beds and borders of the flower garden were annually mulched with the stuff, and we could see flowering plants took to it as fast as trees, and a little of it was used in potting flower-garden stuff. Just then a parcel of plants for the Experimental came up from Bristol way, and they were actually growing in this very stuff, and we owe to that rev. gentleman's practical knowledge all that we know of it for pot plants, and more particularly for Ferns and bulbs.

All the Ferns, and their allies, that I tried in it were different kinds of Lycopods in 1860, and lots of the new variegated Pteris cretica albo-lineata. I had forty plants of that one Fern sent to me before it was hardly in the London market, all little seedlings but six; and the seedlings in this cocoa-nut fibre stuff out of doors advanced so well last summer with me, that I had no fear of offering them to Mr. Eyles out of my open borders lest the frost should catch them. Another family, the fine new Begonias, were sent here by the dozen, and they, too, took to the cocoa-nut stuff in preference to the best compost.

So you see that all our experience of its uses in potting originated from Bristol. What made me say the refuse dust was made only here at Kingston, which was my great mistake, was this: The inventor of the process of crushing the nut was occupied in another patented process of a different kind next door to me some years back, and he told me his patent for crushing the cocoa-nut was for all England; but he has been dead three or four years, and probably the time of his patent may be run out, or a very different process may have been applied to the crushing of the nut-shells at Bristol; or the Kingston firm may let leases under the original patent, which is called after my old neighbour, Mr. Barsham, "Barsham's Patent;" but of the business part of the affair I know next to nothing. I only went once over the works some years since to see the crushing and the whole manufacture, and if anything I ever said anent cocoa-nut fibre refuse has done any harm to anybody, all I can say is that it was entirely unforeseen by me.

About Surbiton the cocoa-nut fibre refuse is being used for mulching flower-beds, borders, and window-boxes; but whether any one uses it for potting I never heard. But I have another string to my bow, which I must pull thus prominently, as if I were at match-targeting. All kinds of people from all parts of the country have been writing private letters to me about this stuff, and some even go so far as to ask me to turn out a pedlar, carry a pack full of cocoa-nut fibre refuse over my shoulder, and they would buy of me, get me customers, and provide me nights' lodgings, for all which I am grateful. But there are two great objections to that course: I am too old to carry much of a load, and peddling is down on the scale from what it was at the commencement of my journey. Another class of private correspondents suggest a sort of agency for me to buy the stuff at 2*s*. a-load, and sell it out in bushels to them and their friends. For that advice I am also grateful. But the truth is this: I have no time to spare for any mortal thing save my own experiments, and for short visits to shows and public places near London.

I have also an invitation from a New Jersey nurseryman, in the United States, to become one of his London houses to deal with in plants, from having seen my way of packing to be, or had been, the same way as Mr. Bird's, of Stoke Newington, for his Chrysanthemums, and he says that is the only and really cheap and safe way of packing for the run to America. He, the New Jersey nurseryman, always packs for London as Mr. Bird does—that is, without pots, or balls, or baskets and mats, and they tell him his plants come fresh to hand; but that he never can induce the London trade to pack out of the old routine, and the consequence is, the expense is three times more than by his own plan, and more than half the plants are dead when they reach him.

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* Being vegetable refuse, by being kept moist it must give out slowly carbonic acid, and this gas is especially beneficial to plants when applied to their roots.—[Eds. J. of H.]

Now, all our American readers will know that I am not in any way connected with trade in plants, save my own seedlings, which can only reach the market through an agency; for I could not trust myself to be agent for myself, much less to be one for the packing of plants for America, or for bushels of cocoa-nut stuff for our provincial markets.

Then, the next thing is to save our own office in London from the heavy postage charges for specimens sent us for identification from the mat and brush manufacturers. I think it necessary to state that the real stuff can be had only where the shell of the nut is crushed, and that I know only of the two places here stated—that at Bristol, and at the mills near Kingston-on-Thames. I think if Mr. Eyles approves of it in the gardens of the Royal Horticultural Society, the Society might sanction a sample of it being placed in their new conservatory on view, in order that Fellows and visitors to the garden, and to the Exhibition next summer, might learn to know it by sight. If so, I think that I could get the authorities at the Crystal Palace to do the same for their visitors, and thus to put it in a fair way of being known to all those who are bent on trying it on their Ferns, bulbs, and other plants. A sample also may be seen, I am told, at the office of this Journal, where any one may call and ascertain what is the true material by the evidence of his own senses.

The next is a very different subject, and one which goes somewhat against the grain. I am told in black and white of a "fact," that goes to prove "the present decay" of us gardeners from the attainments of a former race of florists. The gentleman writes this: "The following short extract will interest you;" it is from "The Dutch Gardener, by Van Oosten, London, 1703." Speaking of the Sowbreads—the Cyclamens, he says, "There are several sorts—there is a double white one which bloweth in the spring, and is much esteemed, and it's said to have been brought from China; yet I believe it got from seed." I suspect, the gentleman remarks, Van Asten is speaking of the Cyclamen persicum; but it is interesting as confirming our old friend Gilbert's statement of the existence of the double sorts—a fact that our present gardeners deny. It is rather an interesting little work, and has some good ideas. He gives directions for growing dwarf pyramid Apples and Pears—the one on paradise, the other on Quince stocks. This would interest Mr. Rivers. But how will it interest breeders and the cross-breeders of the present day?

I confess myself to be entirely ignorant of the mode by which the old florists obtained double flowers, and I believe no one can now point out the real way. I look on the production of double flowers to be the end of a tether in one style of cultivating plants; and I hold it as a "fact" of the want of decay in the art of cultivation, that when cultivation emerged from the rule of thumb, to assume the natural or scientific practice now so far on the march of progress, the change was inimical to the production of double-flowering seedlings; that, like the variegation of plants, about which we have been so long and so far out at sea, the cause of doubleness was not owing to the superior cultivation of the parents, but to a long course of very unnatural way of growing plants, so to speak. All these changes I hold to have been brought about under conditions which were not natural, or likely to bring out the vigour of the parents in a natural way. I hold, also, that there was nothing accidental in the cause why double flowers or variegated leaves have been, or still are produced; that the result was owing to a sure and certain law, which would be now just as sure and certain in its results if we did but know it. And although I hold that opinions which are not backed by experiment are of little worth, I shall give my private opinion on how double flowers have been formerly obtained, without putting more stress on it than if I had never given the subject a thought.

It has often appeared to me, then, that the parent plants of double flowers have long been under a course of high cultivation wrongly applied, if you can understand how that could be; but I shall explain by a reference to what is now very common. A fruit tree is bought and is cared for in the highest degree of cultivation, and the consequence is an immense deal of wood and very little fruit. The system is changed; lighter soil, less roots, and the lesser number of them more near to the surface—that causes a check, and fruit-buds come instead of wood ones. Then the high state of culture wrongly applied, which I assume did the same thing at the same time, stimulated the vital power, and at the same time curbed that power unnaturally, and that brought about the derangement in the progeny which we see in double flowers. And the practice was on this wise: The composts were then of the most stimulating character, and the application of them was exactly the reverse of what is now practised. Neither pots nor borders were then much drained, and all the compost was sifted to the finest mould. Turn to that system, and in time it will do as formerly.

D. BEATON.

NOTES ON VEGETABLE CULTIVATION.

(*Continued from page* 456.)

CARROT.—Although there is reason to believe the parent of the cultivated Carrot is an indigenous plant, yet it is far from being so hardy as some that have an origin in a more temperate climate. Be this, however, as it may; certain it is that the young seedlings are more liable to attacks from insect and other depredators than most other plants we have, especially when they are sown in the rich soil of most gardens. The soil best adapted to the Carrot is an open sandy one, deep, and not of that pernicious kind called a hungry sand. Such soils as we often see by the margins of some rivers suit Carrots best, the subsoil not being that dry impenetrable gravel so common on dry soils. The varieties best adapted to the garden are Early Horn, or its improved offspring the French Horn. James' Scarlet is also reported to be a good Carrot of an intermediate class; and the long Orange, Altrincham, or Surrey for late and general supply. But the Horn Carrot is esteemed the best, as containing least of that central pith or hard indigestible substance which comprises so much of the long varieties; the red or outer crust being the most valuable part of a Carrot, and the variety containing the greatest amount of red substance is the best article for table. For early use sow in a hotbed the middle of January; thin duly as they advance, and, as most families like them when not much larger than good Radishes, the thinning may be done by degrees. An early out-door crop may be sown on a warm border the first week in March if the weather permits; but the main crop need not be sown until the middle or end of April. Shallow drills about a foot apart will do, taking care to look sharply out for slugs and other enemies in a week or so after the seed is sown; and if you have any reason to expect these enemies scatter the ground over with soot and lime, which will keep these destroyers at bay a few days—perhaps until the young plant be able to get out of the way. Thinning and the other features of their culture, it is presumed, are understood by every one.

CAPSICUM.—Although not generally ranked as a vegetable, still as an article often grown in the kitchen garden it is worthy of a notice here. There are many varieties of this article, some more for ornament or novelty than use; but we will only allude to the most commonly cultivated kinds for pickling and such purposes, and would say that the earlier these can be sown and reared the better. Sow, therefore, in a pan or pot in a hotbed in January, and keep them in that place until May, pricking-off and potting as wanted, and, after gradually hardening them off, plant some out against a sunny wall in June. Others had better be planted under glass on a rather poor soil not too deep; and if with a hard impenetrable bottom, so that the plants will receive a check when they reach it, so much the better. Those against walls ought also to have their roots cut with a spade if they show symptoms of becoming too gross, as it must be borne in mind the continued growth of the plant is against its ripening the fruit then on it. The old small Red is the best bearer, and for general uses the most convenient.

CELERY.—Certainly this is a British plant whose habits are well known, growing most abundantly on the salt marshes by the sides of tidal rivers and similar places, but by improvement in cultivation the rank flavour of the original has given place to one of a more delicate character. Notwithstanding the long array of names some seedsmen prefix to this article, there are in reality but few distinct kinds, the old-fashioned designation of Red and White Celery being perhaps all that is needful to know. The qualifications of a good kind being solidity of stalk, free growth, not liable to run to seed, and a delicate crispness free from all approach to stringiness. Now and then new varieties named after some celebrated grower are offered to us as possessing these qualifications, which in turn are superseded by somebody else's still superior article. In the matter of decided improvement I have no hesitation in saying that Celery has certainly advanced more than many things the last twenty years, the specimens of hollow-stalked Celery being fewer now than at that time; and as names change so often it is needless here mentioning any, but I will at once to proceed to the cultivation. Sow for the first crop the first week in January in some box or pan, which place in a hotbed; and when the young plants are up large enough to handle, prick them out into other boxes or pans, which in like manner place in heat again. This sowing will most likely furnish sufficient plants for early purposes; and the main crop may be sown about the middle of March on a slight hotbed, the mould being 6 inches thick and the surface made fine. Some spare lights, if they can be spared from other places, will be useful in protecting and encouraging the young seedlings, but sometimes they will do very well without. Prick out the young plants when convenient to handle into some good well-prepared bed, and at the proper time they may be planted in the trenches. The mode of doing this has been so often explained, that it is only necessary here to say that do not by any means dig the trench too deep, or, if so, be sure that the plant has still plenty of good material to grow in; for to dig a ditch as deep as the cultivated soil, and then dig in some raw dung into an obstinate unfertile subsoil and plant immediately is very bad practice, and is the cause of so much Celery running so many weeks in summer without making any progress. Subsoils require fertilisation, and until that is done the roots will not occupy it. Do not be too hasty in earthing-up, although the mode of putting that off until the plant is nearly full grown is not to be recommended. A little earthing in dry weather is beneficial. Celery is one of the gross feeders, drinking in large quantities of liquid manure like a toper. It, however, benefits much by it, and during the growing season may be treated thereto with advantage. Avoid the neighbourhood of trees, and as soon as the ground is clear dig it immediately for other crops.

J. ROBSON.

ROYAL HORTICULTURAL SOCIETY.

MARCH 4TH.

FRUIT COMMITTEE.—Mr. Edmonds in the chair. Prizes were offered at this Meeting for the best and second best three dishes of any variety of dessert Apples. The same for kitchen Apples, dessert Pears, bunch of new Grapes, bunch of late Grapes, and dish of Strawberries. In the dessert Pears, early Grapes, and Strawberry classes there was no exhibition. The first prize for dessert Apples was awarded to Mr. Hall, gardener to Captain Tyrrell, of Fordhook, Ealing, for Fordhook Bellefleur, Blenheim Pippin, and Golden Russet; and the second to Mr. Cunningham, gardener to the Bishop of London, Fulham, for Ribston Pippin, Scarlet Nonpareil, and Ord's Apple. In kitchen Apples, Mr. Cunningham was first with Northern Greening, Norfolk Beefing, and Winter Greening, or, as it is generally called, French Crab.

In Class E, the best bunch of late Grapes, any variety, there were three competitors. Mr. Tillyard sent a magnificent bunch of Muscat of Alexandria; and Mr. Hill, of Keele Hall, sent one of Lady Downe's Seedling. Both of these were very beautifully preserved, not a shrivelled berry was to be seen on the bunches, and the stalks were as fresh as they were the day they were ripened in August last. Mr. Tillery, of Welbeck, sent two very large bunches of Trebbiano, which were in capital condition, but were shrivelled, and very richly flavoured. In consideration of the fine condition of the exhibitions of Mr. Tillyard and Mr. Hill, they were each adjudged a first prize; and in consideration of the size of the bunches and rich flavour of Mr. Tillery's, the Committee awarded a similar prize to them.

Mr. Pottle, Little Beelings, Woodbridge, Suffolk, sent a dish of early Potatoes, grown in the open air in the Suffolk Crag. The tubers were planted on the 17th of October. The Committee highly commended this exhibition, and voted to Mr. Pottle the Society's Certificate.

FLORAL COMMITTEE.—The business of this Meeting was more of a routine description than of a floral display. Six new members of the Committee had to be initiated and installed in the room of the six of the Committee who went out by rotation at the recent anniversary meeting of the Council of the Society by whom these changes are managed under the bye-laws of the Society.

A most welcome proposal was made to the Committee at their last sitting by a gentleman in the city, who offered to give a prize of five guineas for the best collection of dinner-table decoration plants, all standards, and all in pots not larger than 6 inches in diameter—that is, common No. 32-pots; the stems of such standards and the height of the pots not to exceed 21 inches. But the details were reserved for the consideration of the Floral Committee, and were now decided on as follows:—

Twelve kinds of standard plants to be a collection. The pots not to exceed 6 inches in diameter, and the height of the pot and the stem of the standard plant not to be under 20 inches, nor above 24 inches. The plants to be ornamental either in their flowers, their fruit, or their foliage. To this we would suggest, that four out of the twelve plants be in fine bloom, as many in fruit, and the remainder in beautiful and striking foliage—such would be an additional claim to the award. It was at first suggested that exhibitors should be at liberty to screen the pots in any manner their own taste might dictate; but that suggestion was rejected by the Committee, as tending to limit the competition to the neighbourhood of the metropolis, while the Committee expected from the great country party a more free expression of the dash and bearing of their family dinner-decorations when at home in the provinces, where the flower-pots are more commonly sunk in solid gold or silver vessels, than in any temporary screens or flimsy ornaments. And we may add, of our own knowledge, that the Committee were led to this point from the exhibition of so much of the plum-pudding style of the dessert competition at the opening of the new gardens. As much as to say, Let us first get this grand idea fairly afloat, and then it will be sufficient time to discuss the screening portion of it. The time for this competition was also changed by the Committee from July the 2nd to some day in September, probably in order to have a better choice and chance of plants in fruit.

Among the new flowers exhibited were two which obtained First-class Certificates by the unanimous votes of all present. The one is the finest species that has yet been seen among the Cattleyas, and is named Cattleya amethystiglossa, a surname which sufficiently indicates the richness of the curved labellum, while the sepals are richly and evenly dotted with purple spots all over a flushed carnea ground-colour. It was sent by R. Warner, Esq., of Chelmsford.

The next was Salpigophora chilensis, sent by the Messrs. Veitch, supposed to be hardy, and appearing to the best practical judges present to be a free-blooming plant, and, likely to bloom in the autumn, when it comes to its natural elements. The flowers are of a rich rosy purple, but small for this family. The growth and looks come nearest to those of Tecoma or Bignonia jasminoides.

Mr. Wm. Paul, of Waltham Cross, sent a large collection of cut Camellias, for which a Special Certificate was given. It contained amongst others, Princesse Bacchiochi, crimson with white stripe, very fine; Eximia, fine; Elater, large veined rose, very much like Maesta Rosea, but somewhat more pointed in the petal; Fæstii, very fine and large; Fimbriata, Donckelaarii, and many other fine sorts in good condition.

There was a small Lælia from Mr. Williams, more fit for the herbarium than a floral committee; but there was a highly interesting single Violet, and a cross-hybrid between a garden Stock and Mathiola sinuata, from Captain Trevor Clarke. The Violet is said to be the single form of the common double Neapolitan Violet; and a new race of Stock with a more hardy constitution than any of the present race is expected from this hybrid Stock, of which we believe Mr. Eyles has received a plant to be proved at Chiswick.

From Mr. B. S. Williams, of Paradise Nursery, Holloway, came a very pretty variety of Cypripedium barbatum, which received a Label of Commendation.

THE LARGEST APPLE TREE IN AMERICA.—A correspondent of the *American Agriculturist* says that on the farm of Peter Kohler, Lehigh County, Pa., there is an Apple tree which, by actual measurement just made, is 17⅔ feet in circumference, 1 foot above the ground. At nearly 7 feet high it is 15¼ feet around. It forks at the height of 7 feet, one branch measuring 11 feet 2 inches, and the other 6 feet 7 inches in circumference. The tree is 54 feet high, and the branches extend 36 feet each way from the trunk. An old inhabitant, of the age of ninety-three years, says the tree is over a hundred years old. It still bears every other year, the crop last year being about forty bushels of sweet Apples. Can any one excel this?

CULTURE OF HERBACEOUS PERENNIALS.

(*Continued from page* 462.)

Cutting-down.—As some of the flowers bloom early in the spring, others in early summer, and so on through the season, the dying flower-stems should be cut down as soon as the bloom is over. Nothing looks more unsightly than decaying flower-stalks. Even if the stems bear seed, they in that state are not ornamental: hence, not a day should be allowed to pass over after the flowers fade before the old stems are cut down to the ground, and also all the decaying leaves. Young leaves will then grow, and the plants though not in flower will, at least, appear green and sightly. Some, indeed, such as bulbs, will need to be nourished to the last as long as the leaves continue green, in order to lay up a store of sap in the bulbs for the following year; but these are exceptions easily remembered. The generality will bear cutting-down close to the ground leaves, and will be all the stronger for it the next season.

Propagation.—There are several ways of propagating perennial hardy herbaceous plants—viz., by dividing the roots, which is the most common, by suckers, by seed, by cuttings of the flower-stems, by root-cuttings, and by piping. The names of the different modes almost indicate sufficiently the way they should be done; however, it may be advisable to briefly describe each.

By Dividing the Root or Plant.—Take up just after flowering any plant that will increase by this method, and divide it with a strong knife into good-sized sections. Take away the old soil, and replace it with fresh of the same kind; then plant a strong section in its place, and the rest in a nursery-bed, either to supply deficiencies, or to exchange with some other cultivator.

By Suckers.—Such species as throw up suckers may be increased very easily without disturbing the parent plant. Bare the sucker a little way down till roots are perceived, then cut it off below those roots, and immediately plant the suckers in a shady border for a year, when they may be transplanted into the place where they are to bloom.

By Seed.—Some species do not propagate readily by the ordinary methods: hence it is necessary to allow a stem or two to produce seed where increase is desirable. If the seed ripens by the middle of July, it may be sown immediately in the same kind of soil as the parent plant delights in. The seedlings may remain in the seed-bed till spring, and may then be planted out in nursery lines for a season, and afterwards transplanted to their final home; others that do not ripen their seed till later, should have the seed gathered, dried, and kept till March or April, and then sown in beds, and when strong enough, planted out and transplanted as directed above for such as are sown in the same year.

By Cuttings of the Flower-stems.—When this mode is adopted (and it is applicable to such plants as double Scarlet Lychnis, double Rockets of sorts, and others), it is better to sacrifice one or more heads of flowers just as they are coming into bloom. Such stems have fresh leaves on them; cut them into pieces about 2 inches long, divest them of their lower leaves, and then prick them out in sand, and place a hand-glass over them shading from hot sun; they root readily, and form a plant out of the top joint of the cutting. Such plants require planting out in the reserve garden for a season, and to be prevented from flowering, in order to make strong blooming plants for the border the second year.

By Root-cuttings.—The common Mint affords an example of this mode of propagation. Such plants send forth underround runners, and these runners are full of eyes which, when he stolons or creeping roots are cut into lengths, start up hoots which quickly make excellent plants. This mode may be done at almost any time of the year; but the best time is about he end of May, because then the young plants become well established before winter. Plant the cuttings out in rows in he reserve garden [illegible] transplant them [illegible] the spring [illegible]

By Pipings.—This way is used for plants that have jointed stems, of which the Pink furnishes us with an example. This mode is well known to florists, and is performed thus:—With a sharp knife cut off as many pipings as may be required, dress off all the lower leaves, leaving four or five at the top. Let them be left entire, and then plant in sand under a hand-light behind a shady wall until they begin to grow; then lift off the hand-light, and when they are sufficiently rooted plant them out in a nursery-bed for a year, allowing no flowers to be produced; they will then form good plants to transplant where they are to bloom.

Selected List.

Arranged according to the time of flowering, colour, and the height they attain when in bloom.

February.

Red.

Cyclamen coum, 3 in.

White.

Helleborus niger, 9 in.

Yellow.

Eranthis hyemalis, 3 in.

March.

Red, Scarlet, Crimson.

Hepatica americana rubra, 6 in.
Cyclamen europæum, 3 in.

White.

Hepatica americana alba, 6 in.
Primula vulgaris flore pleno, 4 in.

Yellow, Orange.

Primula vulgaris flore pleno, 4 in.
Eranthis sibiricus, 3 in.
Ranunculus ficaria flore pleno, 4 in.

Blue, Purple.

Hepatica acutiloba, 6 in.
  angulosa, 6 in.

April.

Red, Scarlet, Crimson.

Aster vernus, 6 in.
Cyclamen repandum, 4 in.
  neapolitanum, 4 in.
  vernum, 4 in.
Hepatica triloba rubra, 3 in.
  flore pleno, 3 in.
Phlox verna, 6 in.
Silene Schafftii, 6 in.

White.

Asphodelus ramosus
Cornus suecica, 6 in.
Epimedium grandiflorum, 3 in.
  macranthum, 6 in.
Hepatica triloba alba, 3 in.
Mitella diphylla, 3 in.

Yellow, Orange.

Iris lutescens, 6 in.

Blue, Purple.

Anemone apennina, 6 in.
  Hallerii, 6 in.
  trifolia, 6 in.
Aubrietia purpurea, 3 in.
Gentiana utriculosa, 6 in.
Hepatica triloba, 6 in.
  flore pleno, 6 in.

May.

Red, Scarlet, Crimson.

Aquilegia Skinneri, 1½ ft.
Epimedium diphyllum, 3 in.
Dielytra formosa, 6 in.
  spectabilis, 2 ft.
Gnaphalium dioicum, 3 in.
Lilium pomponium, 2 ft.
Ononis spinosa, 1 ft.
Pæonia Humei, 2 ft.
Papaver bracteatum, 4 ft.
  pulcherrimum, 3 ft.
Pulmonaria virginica, 1 ft.
Sedum acaule, 3 in.

White.

Ajuga reptans alba, 4 in.
Anemone alpina, 4 in.
  Fischeri, 3 in.
  narcissiflora, 1 ft.
  pennsylvanica, 1 ft.
Anthericum Liliastrum, 1 ft.
Arabis alpina, 6 in.
Campanula glomerata alba flore pleno, 1½ ft.
Iberis sempervirens, 6 in.
Iris florentina, 2 ft.
Lychnis dioica alba, 1 ft.
  viscaria splendens, 1 ft.
Ranunculus aconitifolius [illegible]
  amplexicaulis, 1 ft.

Yellow, Orang

Alyssum saxatile, 9 in.
[illegible] sibiricus, 2 [illegible]

Yellow, Orange—(continued.)

Caltha palustris flore pleno, 1 ft.
Convallaria aurea, 6 in.
Coronilla minima, 3 in.
Eriophyllum cæspitosum, 1 ft.
  oppositifolium, 1½ ft.
Iris bicolor, 1 ft.
Œnothera gracilis, 1 ft.
Potentilla aurea, 3 in.
Trollius europæus, 2 ft.
  americanus, 1 ft.
  asiaticus, 1½ ft.

Blue, Purple.

Ajuga pyramidalis, 6 in.
  reptans, 6 in.
Campanula speciosa, 2 ft.
Coronilla elegans, 6 in.
Gentiana acaulis, 4 in.
Lithospermum purpureum, 1 ft.
Pulmonaria cœrulea, 2 ft.
Pulsatilla vernalis, 1 ft.
Saxifraga oppositifolia, 2 in.

June.

Red, Scarlet, Crimson.

Agrostemma coronaria rubra, 1 ft.
Aquilegia formosa, 2 ft.
Chelone mexicana, 3 ft.
Dianthus alpinus, 6 in.
  alpestris, 6 in.
Lychnis chalcedonica flore pleno 4 ft.
Lychnis fulgens, 1½ ft.
Monarda didyma, 2 ft.
Ononis arborescens, 2 ft.
Potentilla Macnabiana, 2 ft.
Sedum roseum, 6 in.
Veronica caucasica, 1 ft.
Veleriana dioica, 1 ft.

White.

Aconitum album, 4 ft.
Anemone multifida, 1 ft.
  obtusiloba, 6 in.
Astilbe rivularis, 2 ft.
Campanula coronata, 1½ ft.
Gypsophila sibirica, 1½ ft.
Hemerocallis alba, 1 ft.
Iberis corifolia, 3 in.
Iris plicata, 2 ft.
Lilium candidum, 3 ft.
  variegatum, 3 ft.
Lychnis sibirica, 6 in.
  Sieboldii, 6 in.
Œnothera taraxacifolia, 6 in.
  speciosa, 1 ft.
Spiræa palmata, 1½ ft.
Thalictrum clavatum, 2 ft.

Yellow, Orange.

Asphodelus luteus, 5 ft.
Helianthus grandiflorus, 3 ft.
Hemerocallis flava, 3 ft.
Linum dahuricum, 1 ft.
Lysimachia capitata, 1 ft.
  thrysiflora, 1½ ft.
Œnothera glauca, 2 ft.
Potentilla Bruciana, 1 ft.
Ranunculus acris flore pleno, 2 ft.
Thalictrum flexuosum, 1 ft.

Blue.

Aconitum Halleri, 4 ft.
  napellus, 5 ft.
Aster pulchellus, 1 ft.
Calendrinia speciosa, 3 in.
Campanula glomerata flore pleno, 2 ft.
elphinium formosum, 3 ft.
  Hendersonii, 3 ft.
  grandiflorum, 2 ft.
unkia grandiflora, 1 ft.
inum grandiflorum, 1 ft.
upinus polyphyllus, 3 ft.
ordmannia cordifolia, 1 ft.
Orobus Jordoni, 1 ft.
  tuberosus, 1 ft.
[illegible]yteuma campanula[illegible]m, 1½ ft.
[illegible]um, 6 in.

Blue—(continued.)
Phyteuma limonifolium, 6 in.
Statice latifolia.
umbrosa.

Blue. Purple.
Aconitum maximum, 3 ft.
speciosum, 3 ft.
Anchusa italica, 4 ft.
Aster amellus, 2 ft.
Campanula carpatica, 1 ft.
persicifolia maxima, 3 ft.
pumila, 3 in.
Centaurea purpurea, 2 ft.
Delphinium azureum, 4 ft.
Barlowii, 3 ft.
Moorei, 2 ft.
speciosum, 4 ft.
Dracocephalum palmatum, 1½ ft.
Dracocephalum Ruyschianum, 1 ft.
Erigeron pennsylvanica, 1 ft.
Gentiana asclepiades, 1 ft.
cruciata, 6 in.
macrophylla, 1 ft.
Lupinus nutkatensis, 2 ft.
Phyteuma campanulatum, 1½ ft.
orbiculare giganteum, 6 in.
Statice altaica, 1 ft.
articulata, 6 in.
binervosa, 1 ft.
cuneata, 6 in.
dichotoma, 6 in.
nana, 3 in.
scoparia, 1 ft.
Stenactis speciosa, 2 ft.
Veronica orientalis, 6 in.
Viola suavis, 9 in.
Wahlenbergia grandiflora, 1 ft.

(*To be continued.*) T. APPLEBY.

HODGIN'S BROAD-LEAVED HOLLY.

MR. FISH (see page 389), in THE JOURNAL OF HORTICULTURE, writing of the Trinity College Gardens, Dublin, says, "We have no recollection of seeing this variety before." It is much to be regretted this fine evergreen is not more generally known. Perhaps the dimensions of half a dozen of our plants may be interesting to your readers. They are all pyramidal plants on turf, and clothed with foliage to the ground.

No.	Height.	Width at base.
1.	19 feet.	20 feet.
2.	18 ,,	17 ,,
3.	16 ,,	16 ,,
4.	15 feet.	17 feet.
5.	15 ,,	14 ,,
6.	14 ,,	13 ,,

The above are a few selections from many plants we have in the pleasure grounds here. It is very strange this variety should be so little known. We are frequently asked which Holly it is.—WILLIAM HILL, *Keele Gardens, Staffordshire.*

PEACH BLOSSOMS FALLING.

WHAT is the cause of my Peach blossoms falling off? I planted four years ago Peach trees at the back wall of a large greenhouse, 35 feet by 14 feet. The border in which they are planted is 5 feet in width, from the wall to the return-flue. The border is made up of the best material, in which the trees have done well, having fine healthy wood, and at this moment are covered as with a sheet of bloom. Last year all the bloom fell off without one fruit setting. I am afraid of the same failure this year. There is a table stage in front 3 feet high, but the plants are low, and I think do not interfere with the trees on the wall.—PEACH.

[High plants on the stage by shading would prevent the wood hardening, and though there might be plenty of bloom it would not be perfect. If your plants are low this would not be the case to much extent. We think very likely the border was rather dry when the buds dropped last year. Examine now and see, not the surface merely, but to a depth of a foot or more. If dry, make holes and water at about a temperature of 70°, but do not saturate; let the water be given gradually, a little at a time, and two or three days between the waterings. A saturating all at once, if dry previously, would cause the very effect you wish to prevent. Lastly, if all the border is right, or made so, to make doubly sure, thin out the blossoms well where so very thick, give a little air every day, plenty when the weather is mild, and as an average keep not above 50° at night.]

MANAGEMENT OF OLD ORANGE TREES.

TRENTHAM ROSE GERANIUM NOT BLOOMING.

IN THE JOURNAL OF HORTICULTURE of August 13, 1861, *Flora* was promised further information about the management of Orange trees in boxes. The instructions then given were followed out. As much of the old mould was removed as possible, without giving a general shift, and new soil added. The mould taken out was caked and full of worms, but the plants do not look better for the good soil; the leaves are colourless and shrivelled. The trees are old, 8 feet high, in circular tubs 6 feet in circumference, and 1½ foot high. The old tubs being rotten, new ones have been made of the same height, but 7½ feet in circumference. Is this the proper season for the shift to be made? and what degree of heat will they require afterwards? The trees are grown in a conservatory. There is no viuery to place them in after they have been shifted. How can they be managed in the conservatory?

Flora also wishes for some hints about the blooming of the Trentham Rose in beds. Last summer they were all leaf instead of flower.

[If the soil was really so bad as you describe and full of worms, the less that was left of it the better. You do not say what the state of the roots is; but if well done with sweet fibry soil, they might do if carefully watered—that is, the soil not drenched until roots were working in it. The roots will suffer nothing from being carefully deprived of old worm-filled soil if they are rightly managed afterwards. Even if washed of all soil whatever it may be in the favour of the plants; and if allowed thus to absorb for ten minutes, the plants will need more syringing of the head than waterings at the root for a week or two.

We have answered the note before receiving specimens of the leaves. If only a few are so pale they will get over it, as the leaves are a good size. If many are so pale it shows that the roots are in unhealthy soil, and too much water given them for the heat. When kept cool in winter the soil should be dryish. In a healthy state we would expect plants to shed a few such leaves.

If the Trentham Rose Geranium makes so much foliage, give it poorer soil or plant it very shallow; and if that is not enough, cut the roots. With us it blooms splendidly if merely planted.]

GAS IN HOT-WATER PIPES.

I USE one of Monro's boilers for heating the hot-water pipes in my greenhouse. A three-inch T-piece supplies two four-inch flow-pipes, and there are two returns, one either side of the boiler. I have been much troubled with air in the pipes, which though let out at taps placed on purpose, accumulates so rapidly when the fire draws keen, that in a couple of hours afterwards a considerable quantity of water will, if not prevented, boil out, returning through the supply-cistern which feeds the boiler at the bottom of one of the feet. To avoid this difficulty I have had a three-eighths pipe tapped into one of the flow-pipes running up 2 feet above the top of the supply-cistern. On turning the tap at the top of this pipe last night to let the accumulated air out, I placed a taper I had in my hand to the current of air to see if it were sufficiently strong to blow the light out, when the gas (hydrogen, I suppose) ignited, burning with almost a pure pale blue flame. Are the iron pipes becoming oxygenised?—JUNIOR.

[It is quite likely that the pipes may become oxygenised, but without more proof we cannot be certain as to the gases. Why not relieve yourself of all doubt and uncertainty in the matter by taking your taps and using them for beer-barrels, and take a small gas-pipe right outside the house, and leave the mouth open, bending it down to prevent the dust getting into it?

There is little the matter with the Camellia leaves you enclosed. They may have had a scorching when the points of the leaves were damp. The simplest shading would be thin calico or muslin furnished with rings to hook on and off when desirable.]

HOTBEDS WITHOUT MANURE.—Dig, first of all, a trench 10 feet long, 5 feet wide, and 20 inches deep. This trench forms the bed for the materials. If, however, you wish to raise the bed above the level of the soil, you can, with some stakes and old boards, build a kind of box which will hold it. This done, we strive to collect together on the spot the necessary materials to construct the bed itself. Procure, first, 300 lbs. to 500 lbs. of straw, or of old hay; or it may be of litter, or of well-dried moss. Second, 1½ to 1¾ bushels of powdered quicklime. Third, 1 lb. 4 ozs. muriatic acid, diluted in 20 gallons of water. Fourth, 1½ lb. of saltpetre, dissolved in 27 gallons of water. Fifth, a new broom, or one nearly new. Spread over the bottom of the trench a layer of straw, or whatever the material may be, about 8 inches or 10 inches thick; sprinkle it with the quicklime; dip your broom into the vessel containing the muriatic acid diluted with water; then sprinkle this first layer, after which you must make a second one of the same thickness. You scatter upon it the lime, and sprinkle the diluted muriatic acid in the same manner as before. Make at last a third layer of straw, of less thickness than the first two—say 4 inches or

6 inches only, and wet it with the water in which you have dissolved the saltpetre; but shake up the bed often, and pour it upon it, so there may be absorption by the lime, which will evaporate a good part of the liquid in parting with its heat. After this operation, the frame can be placed upon the bed, a few inches of earth spread inside, and as soon as the extreme heat has subsided, which will be in two or three days, it will be ready for use. Beds formed in this way will maintain their heat from four to six weeks.—(*Revue Horticole.*)

LADY DOWNE'S GRAPE.

We have received from Mr. Thomson, gardener to His Grace the Duke of Buccleuch at Dalkeith, a bunch of Lady Downe's Grape, which is one of the largest of the kind we have yet seen. It measured 10 inches from the shoulder to the point, and had one large shoulder. The bunch was well set with large, round, jet-black berries beautifully covered with bloom. The crop has been hanging since September last, and the fruit is now as plump and fresh, with stalks as green as any new Grapes possibly could be. The fine trace of muscat flavour is quite distinct; and altogether this bunch is almost as remarkable an instance of skilful gardening as the Black Hamburghs ripened on the 1st of January, and which were noticed in the February Number of the *Florist and Pomologist* as "the most masterly example of Vine-forcing that has yet come under our notice."

From all we have seen of Lady Downe's Grape, we have no hesitation in pronouncing it one of the best, if not the very best, late Grape there is in cultivation.

CRACKING OF GRAPES.

A successful experiment which I made upon the Chasselas Musqué variety of Grape the present season will indicate the remedy, and perhaps serve to explain the cause of the cracking to which this variety is peculiarly liable.

About the 15th of June, after the berries had attained their full size, and before they had commenced to colour, each bunch was carefully suspended from the trellis wires, so as to relieve the stem as far as possible of its weight; then, with a sharp, thin-bladed knife, an incision was made in the stem, with a sloping, upward cut, about three-quarters of an inch in length, and to the depth of about one-half the diameter of the stem. This checked the exuberant flow of sap to the fruit; the berries ripened perfectly, and hung upon the Vines, plump and sound, until the 15th of November.

This delicious Grape, which has no superior in flavour, has been banished from most vineries on account of its almost universal tendency to crack. When the Vine is grown in an inside border, and the watering judiciously managed, this may be sometimes prevented, although it not unfrequently cracks even when grown in pots. It would seem that the sap in this variety flows with unusual freedom, and with undue determination to the fruit; the skin being thin, cracking and bursting of the berry necessarily follow.

For its earliness, abundant bearing, and high musky flavour, this variety is worthy a place in every vinery, and well repays the small amount of time and care required to insure a perfect crop. It is called by the English Joslyn's St. Albans, and in America, Muscat Blanc Hâtif.—James Matheson.—(*American Gardener's Monthly.*)

NEW BOOK.

Imperial Library Atlas.*—The first part of this work is just published, and the portion of England, the France, and the Switzerland comprised in it are excellent. The maps include all the new lines of railway; and being fully coloured, greatly facilitate reference by the readiness with which the boundaries of each county, department, and province can be appreciated. They are on imperial folio sheets of drawing-paper, and when completed will form a very handsome volume. They are prepared with great attention to accuracy.

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* *Philips' Imperial Library Atlas of the World, &c.* By J. Bartholomew, F.R.G.S., and W. Hughes, F.R.G.S., &c. London: G. Philip & Son, 32, Fleet Street.

GARDENING IN BURMAH.

Extract of a letter from Tavoy, Tenasserim Provinces:—
"Preventions against frost are here unnecessary, but we have as much to guard against the scorching rays of the sun. This luminary must be carefully guarded against in the middle of the day, or it would as surely destroy vegetation here as frost would do in England. I am, of course, only speaking of plants introduced into this country, and forced into life and activity when other vegetation is in a dormant condition. We can only grow English vegetables in the dry season — November, December, and January; and at this time all the leaves in the jungle are falling, and the trees are quite bare until the beginning of May, when the monsoon commences.

"I have begun to raise a few things under my house ready to put out as soon as the monsoon has abated—such as Beetroot, Turnip-rooted Cabbage (a delicious vegetable), Cauliflower, &c. I get these plants about 8 inches or 10 inches from the ground, then put them out, as they can then stand a good storm of rain, which we generally have with thunder at the termination of the monsoon. I have adopted a novel plan of growing these plants. I have a strong plank with four small wooden wheels running upon two pieces of timber, so that I can push it into or near the direct rays of the sun, and then at night, or when it rains, I can pull it under the house. The seeds are sown in common packing-cases cut down, and they answer the purpose very well. By adopting this plan I procure things a month earlier than my friends in Moulmein. I have Asparagus now growing well in my garden, and intend trying Rhubarb and other things, many of which have never been seen in Burmah. Have you seen the Celeriac? It is the German Celery, and is boiled like Beetroot, and eaten with salad. Its advantage is that it is much more wholesome than Celery eaten in the raw state.

"I am now a member of the Horti-Agricultural Society in Calcutta, and procure almost all kinds of seeds of the finest description, especially vegetable. Many thanks for the seeds you sent me. I should be glad of some first-rate Fuchsia seed, or the seed of Myrtle. I think I have almost everything else I require. I am now growing a new kind of Dianthus, Roses, Statice, Gloxinias, Picotee, Cineraria, &c.—indeed, I find I can grow almost everything I wish, although I had doubted if I should succeed with many things which grow as well or better here than in England.

"I have succeeded in budding Roses almost beyond belief. Some buds were put in about six weeks since, the same buds are now shoots 18 inches in length! and will soon be in full bloom. I much regret not having any Fuchsias: although I have sown seed repeatedly not one has come up. I received some excellent seeds from London, and amongst them some Fuchsias, but not one came up. Some seeds of Fulgens would be thankfully accepted, or of any other good kind. By the last mail I sent a sketch of my house, so that you will understand better how I can grow my plants, as I say 'under' the house. This style of building is most convenient in this country, forming a promenande in the wet weather, and is the coolest in the hot season. — *Tavoy, Tenasserim Provinces, Burmah, August 15th*, 1861."

THE VERBENA.

A family so numerous as the one intended to be treated of, and which plays so extensive a part in the flower-garden decoration, may very justly be entitled to a separate chapter, especially as its cultivation is, perhaps, more widely carried out than that of any other species of plant now used in the parterre, and to meet the increasing demand propagators have industriously tried to supply us with an infinite variety of tints, all more or less good, so that the public taste has become very fastidious; and after trying and rejecting many new kinds of a merit that would have commanded great attention and a good price twenty-five years ago, they have in some instances fallen back again on old but discarded favourites. But as this is the age for seedlings, and new varieties when really good seldom fail to meet their deserts, we now and then meet with one which retains a good place in public opinion for perhaps a dozen years. Very many are lost sight of in less than the half of that time; and some encountering a snow storm from some exalted power on their entrance into public life, rarely ever rise above the misfortune. But the endless varieties that take their place puzzle all but the ardent cultivator who follows up the series of new kinds which year after year are offered to his notice.

Leaving, however, this part of the subject, let us see in what light the Verbena was held years ago, when its varieties were limited to some three or four.

My acquaintance with the parents of the present extended group of bedding Verbenas commenced about 1830. V. chamædrifolia or V. melindres (for I believe they were identical) being the first of the family, and for some years was kept as a choice greenhouse plant tied up to a stick, and now and then favouring us with a truss of flowers of a more brilliant scarlet than anything with which we were then acquainted. The only regret being, that the habit of the plant did not conform to a better shape, the method of training at that time being in a great measure confined to upright tying. By-and-by, however, it was tried out of doors in a favoured place, and I well remember the delight it caused in a flower-border in the vicinity of a mansion, whose owner was one of the first members of the Horticultural Society. The summer being a fine one, it bloomed as well as I have ever seen Verbenas do since, and after supplying innumerable cuttings to the gardener of its worthy owner, as well as to many friends, it was thought worthy of a covering, and a low glass frame was made to fit the place it occupied, and placed over it before frost set in; and though the situation was one where severe frosts generally occurred, it lived the winter and flowered early the ensuing season, and its adaptability for flower garden purposes was thus established. This was to the best of my belief sometime about 1837; and about the same time, or before that, Verbena pulchella, another useful kind (and one which I use to a greater extent now than any other, except V. Purple King) was added to our lists. I am not certain whether this one, or V. incisa, a pink-flowered variety, came into notice first, but these two, with V. venosa, became pretty plentiful before 1840, at which time V. teucrioides, a white sweet-scented variety of strong growth, came before us with a high sounding name; and as a year or two before that we were favoured with a crimson variety of neat habit, called Tweediana, we became possessed of almost all the tints we thought could be had in Verbena. And although we had several additions the next few years, I do not think we had any really useful good kinds until 1845, when V. Emma again attracted attention to the Verbena, and the mixture varieties were again called into requisition, improved and sought after with an avidity which continued some years, but latterly has subsided into a more steady demand for kinds possessing distinct qualifications fitting them for bedding purposes.

Now, in the above historical notes on the Verbena, I by no means affirm that the dates given were the first at which the kinds mentioned were known: on the contrary, they might have been in the hands of the favoured few a year or two before that. Neither do I assert these to be the only kinds then known, but they were undoubtedly the leaders in the way. One of the most popular kinds about 1845 being V. Charlwoodii, followed by V. atro-sanguinea, which if still in existence is far from being a despicable one now. A pink under the name of Beauty Supreme, retained a place for many years, and I believe the "White Perfection" of the present day to be more than a dozen years old. But I will not attempt to follow up the advent of new varieties after 1845, or rather after V. Emma became common, for the name would be legion; rather let me point out some remarks to the uninitiated in the way of selecting from the formidable lists we now have the kinds best suited to adorn the flower garden.

It is needless here to say that the requirements of the times have called into existence a greater number of kinds, and a greater diversity of tints of colouring into the Verbena family than into any other that I am acquainted with, the Dahlia alone excepted—from white through all the gradations of pink, rose, scarlet, crimson, maroon, to nearly a black, with some also approaching blue and purple; and a clear bright blue will, perhaps, be forthcoming some day, certainly we have not got it yet. Yellow, unless bright and clear, seems not so desirable, although I hear of inquiries made that way, and last spring I had one sent me under the name of "Welcome," said to possess that colour, but it turned out to be nothing more than a sport from pulchella, and a very indifferent one, too—less of a yellow than many Roses and Carnations that have been called by that name. A much better yellow Verbena existed at least eighteen years ago under the name of sulphurea, but it was not of much account, and I can hardly bring myself to the belief that a yellow Verbena can be much of an acquisition, while a blue of the same colour as Salvia patens would be a boon. However, setting aside these ideal wants, let us see which are the most useful amongst those we possess, and which kinds we ought to dispense with.

Notwithstanding the relationship existing between the florist and the extensive flower-gardener, there are times in which their views differ widely, and in the matter of the Verbena this is very often the case. The florist or exhibitor of Verbenas at a show wants a large truss of bloom, each individual plant being also large and bold, and very often with an eye differing in colour from the limb of the corolla; the whole to present a sort of Mushroom-headed outline, so that five or six such trusses may make a good-sized bunch capable of being examined closely, and their marking, or cloudings, if they be required to have such, may be seen to every advantage. The plant which produces these blooms may be as unmanageable as Couch Grass for anything the florist cares, so long as it produces blooms of the kind that will tell at a show. Now, this is widely different from the requirements of the flower-gardener who has studied the effect of Verbenas of various kinds in the flower garden, and the number of varieties approaching that standard of his wants is much less than many suppose—in fact, I confess that amongst some sixty or more named kinds, I have only two or three that approach what I want a Verbena to be in the flower garden. This, however, I will explain.

It being generally admitted that flower-beds are seldom immediately under the eye of the spectator—more often they are from ten to a hundred yards from him: consequently the flower, if composed of two distinct tints, becomes blended in one intermediate one, which, however, is sometimes pleasing enough, but in a general way is the reverse, two bright colours neutralising each other, and producing an uninteresting mixture differing widely from each. An example of this is recorded in a Number of this Journal, where a correspondent complains of a bouquet being found fault with that was composed of exactly the same colours as were admired in a bed at Kew Gardens—Verbena Purple King as a centre, edged with Geranium Flower of the Day. The complainant, making the bouquet of the flowers of both, was censured for doing so, while the bed was admired. A very little consideration would tell how this is accounted for—the flowers of the Geranium blended with their own leaves, and formed that pleasing tint or mixture which the flowers in the bouquet could not do alone: hence the objection to it. Now, the effect produced by a striped, clouded, lemon-eyed or white-eyed Verbena with the colouring of its other parts, is just such a mixture as the two colours would make when mingled together, and is often far from what is wanted or sought for. On the contrary, clear and distinct colours are preferable, and not such as require to be handled to be admired.

I regret my acquaintance with the latest varieties is not sufficiently extensive to enable me to give many examples; for of late years I have planted Geraniums more extensively than Verbenas, where Scarlet and the other colours that Geraniums represented could be made to do, and the result of the present season's experience has rather confirmed me than otherwise in the superiority of the Geranium for the many purposes of flower-gardening. In saying this I expect some one will be exclaiming, "Look at the gorgeous mass of bloom in so and so beds in August last." This I freely grant; but look at those same beds at the end of September if they be in the south-eastern counties in a dry situation, and have not been supplied with water. Even with all this assistance they would be inferior to the Geranium at the time I mention, although the latter received no assistance whatever beyond, perhaps, the very simple process of picking off a few dead flower-stems. Some will also be saying that I may perhaps not possess the good varieties of Scarlet Verbena. This, possibly, may be so; for I have not yet met with one that meets the requirements I expect of it, although such kinds as Robinson's Defiance, Mrs. Woodroffe, Vulcan Superb, King of Scarlets, Miss Trotter, and other kinds that way, have passed through my hands. I may doubtless be called fastidious, and in some other colours am still more so than in Scarlets; still there are Verbenas that I admire, and I trust similar ones will be forthcoming some day in the Scarlet way.

Of all the Verbenas I have seen, there are none that come so near my idea of perfection as Verbena Purple King. An upright and not a rambling grower, it confines itself without mechanical aid to the spot allotted for it, and whether in a bed or in a line, edging or stripe, requires but very little after-care when once planted and started into growth. The flowers of a good blueish-purple and a small dark eye, not a staring white one, present as a whole an excellent and useful colour, which we do not possess in anything else. True, it is possible, perhaps, to brighten and improve this colour, which I should be glad to see; but I am satisfied with it until this is done. And as the limb or petal of it is more robust than some, it stands longer than most kinds, and does not so soon burn, bleach, or flag with the sun as some kinds do, especially those of the mulberry, maroon, or crimson class—most of which fade very fast under such a sun as we had last August. I hope some extensive Verbena-growers took note of which kinds comported themselves best under such an ordeal, and will favour the readers of The Journal of Horticulture with the result of their experience. My own, I confess, has suffered some change in that respect, as a plum-coloured variety called Ariosto, which I have grown and admired for some years, succumbed sadly to the sun, and presented anything but a lively appearance.

Burning with the sun is not an evil confined to the class of dark-coloured Verbenas. Scarlets are likewise affected that way, though much less so than the maroon; there being something in the colour rendering the latter more susceptible to injury than the former. The paler kinds stand better, and pale blue is perhaps the best of any; but it is pitiable to see the outer edges of flowers like that of Lord Elgin fade or bleach into much the same colour as that of the eye; and all dark-coloured ones that I am acquainted with are liable to this, and I fear it cannot well be avoided. Greater substance of petal may, perhaps, withstand it longer, as the leathery form that florists called into their service in the Pansy enabled that flower to withstand wind and weather better than before, although the constitutional vigour of the plant was thereby impaired. Verbenas, I hope, may be likewise improved in texture of flower, and are more likely to be so if the anxiety to have large pips and trusses be abandoned.

Having already stated that my second favourite Verbena is the old cut-leaved species called pulchella, which has been discarded in many places, but which I am glad to own as one of the most useful. I have two varieties of it—one having a darker hue than the other, but both approaching the lavender blue of the original. No variety that I am aware of covers a bed more speedily; and although its trusses are small compared with that of others, it compensates for that by the abundance of them. It looks best when seen at a distance of 50 yards or more, and no Verbena that I am acquainted with presents such a mass of colouring, and of a hue we have not many good examples of. The striped variety V. Impératrice Elizabeth is a useful kind for planting close to a window; but at a very short distance its otherwise beautiful stripes become mixed and confused.

Having in some measure stated my dislikes in Verbenas, I will now endeavour to explain what I want in this extensive family. First of all, I want a good bright scarlet Verbena, with the eye of the same colour as the rest of the flower, habit much the same as Verbena Purple King, and a constant bloomer. I do not dislike a small dark eye in a Scarlet, it gives greater depth of colouring, but large white or lemon eyes are objectionable. I also want a good dwarf Scarlet of the pulchella habit, the colour as vivid as the brighter Scarlet we now have. This dwarf one and the upright one would suffice in that colour. I also want a clear bright blue—not a dark dull blue or purple neutralised with a white eye, presenting a sort of grey colour, but a clear blue like that of Salvia patens or some Campanula. A medium spreading habit would do for this; but if an upright one could be had so much the better—Blue Bonnet was a sort of example this way, but it wanted improving. I have before stated that I would like to see greater substance thrown into the petals of the maroon-tinted ones, so as to enable them to withstand the sun; habit here may also add improvement, and the other colours might also receive a helping hand in the same way. White Verbenas I have little regard for, as we have such an abundance of variegated plants all in some degree more interesting than the Verbena, that a white one is hardly needed except for variety.

It is needless here to enter into the culture or propagation of this class of plants, since so many papers bearing on this matter have issued from the pens of Messrs. Fish and Beaton. Suffice it to say that the most difficult matter seems to be to save as many plants through the winter as will suffice for a good batch of cuttings in the spring. Some of the varieties being so subject to mildew, the white ones especially being liable to this malady, which is by no means easy to prevent, but I believe is often considerably encouraged by [illegible] and warm atmosphere for the Verbena is much more hardy than is generally supposed, as I have repeatedly kept plants in a healthy state in a cold pit covered only by a single mat over a light, and that only in the coldest weather. The plants being in the ground and not in pots, this method, however, does not furnish so many spring cuttings as when the plants are more portable and can be placed in warmer quarters; but it is a very convenient way to those having no better way of keeping them. As this and other subjects connected therewith probably may be treated of hereafter, I will add no more on that head, but again invite the aid of raisers of new varieties to try what can be done in supplying kinds better adapted to the flower garden than those we now possess, and leave the florist to contemplate his rambling plants with their large trusses wide apart to his heart's content. I would also present him with all the fancy kinds, both clouded, white-eyed, and striped, and let me have a few simple but compact flowers growing on plants of compact habit, with constitution proof, if possible, against mildew in winter, and the flower of substance enough to withstand the hot sun of the dog days, and some half-dozen kinds possessing all these qualities are all I want.

J. Robson.

BANKSIAN ROSE INJURED BY THE FROST.

My Banksian Rose, covering the south front of the house, 30 feet high, was greatly damaged by the severe winter of 1860-61, and most of it died off during last summer; parts of it are alive and the main trunk threw out young shoots about 8 feet from the ground. Please tell me how to treat it. Should I now cut out all the dead parts?—B.

[About the middle of April prune out all the dead wood, cutting to sound fresh parts. After that, nail in the young wood of last summer at full length; and, if the young shoots seem too crowded in any part, thin them by cutting them clean off. Then, as you do not mind flowers so much this season as the filling-up of where the old parts died, the strongest of the young shoots of last year that are within 6 feet of the bottom may be cut back one-half or one-third their lengths, in order to get sufficient wood to cover the wall; and, having them first in the proper places you will see exactly where young wood is most wanted, and you will cut in accordingly.]

STRIPED BORDERS—BOX EDGING.

In No. 47 there are two subjects treated of—viz., "One-sided Striped Borders," and "Box-edging," on which, with your permission, I would say a few words by way of a practical hint in regard to each subject; and as my plan is both cheap and most effective, I cannot but hope it will prove acceptable to many of your readers.

A portion of the kitchen garden here abuts on the shrubberies and walks, whilst an Oak-wood opens thereon, and a broad walk skirts this latter, the said kitchen garden being on the other side. Now, a few years ago, Colonel Austen erected along all this exposed kitchen-garden boundary, which forms a curve, a very light five-barred iron espalier, composed of hurdles, 5½ feet long and 5½ feet high, each with an upright bar midway, extending in the aggregate and continuously about 70 yards; and as every one admires the result of the flower-fence and border, I will describe how both are furnished. Opposite to each hurdle subdivision of 2¾ feet, there is planted a dwarf Géant des Batailles Hybrid Perpetual Rose the whole length of the border, and to each hurdle of 5½ feet long is trained also a Hybrid Perpetual Rose, the Chénédole, whose brilliancy of colour and profuse blooming harmonise well with the Rose ribbon on the border below it, and in June and July the effect is truly glorious. The fence is kept gay till the beginning of November by Sweet Peas and Tropæolum canariense—the one sown on the border side of the fence, and the other on the side facing the kitchen garden, the whole of which it thus screens from view with massive gorgeousness. The five-foot-wide border itself is laid out thus:—all along its outer edge, and within a foot of the Box-edging, runs a row of Polyanthuses and Sweet Williams, both of the crimson shades, planted alternately a foot apart, and they succeed each other well on this loamy soil, being followed late in the summer by a ribbon of bloom running along the whole border, produced by Campanulas at 2 feet apart from end to end thereof, all of one sort—the darkest blue. Now, this is a cheap, and at the same time a most showy border-and-fence garniture, and I can assure your readers that they may feel confident that I am competent to give an opinion on floral effect, when I tell them that I have lived as under gardener both at the Duke of Somerset's and at Lord Tredegar's. The iron fence itself (flexible), and made by a Chichester ironmonger for £5 in all, is kept bright and black by a coat of patent asphalted tar mixture every two years.

As regards the Box-edging here, I never saw any more effective and even, and I find that my predecessor here Boxed the whole 1600 yards thus:—A neighbour gave Colonel Austen three barrowfuls of old Box over a foot high, the upper 6 inches of this were chopped off, and the head trimmed and pressed into a trench made by a spade all round the garden, kitchen and Dutch flower-parterres alike, in the month of October, just before the rains set in, which being warm and the ground also at that time, favoured its establishment most effectually; indeed, no failure occurred, and now being kept about 3½ inches high and well trimmed, such of your readers as admire this most beautiful of edgings, would envy this one here.—T. VICKARY, *The Pavilion, Aldwick.*

THE MANETTI ROSE STOCK.

THERE is to a certain extent such a want of accuracy in your answers to correspondents, page 445, about this stock, so unusual in your columns, that I feel compelled to notice the subject.

First let us talk about "suckers," of which there are two kinds, not hitherto distinguished by proper names; so we will call them stem-suckers and root-suckers—the former springing from the stem below the bud or graft, the latter from the roots, often at a great distance from the tree. The Dog Rose is liable to both these evil habits; the Manetti Rose, as far as my experience has gone, to the former only, although one would suppose from what you say about never being "free from Manetti suckers as long as you live," the contrary to be the case, and that it suckers like Raspberries. The writer of such words must cultivate a most peculiar soil, for I have seen the Manetti Rose growing in all descriptions of soils, from a blowing seaside sand to a stiff clay for many, many years, and never saw it make root-suckers. I have a plantation of Manetti Roses used for propagation; the "stools" are 3 feet apart row from row, and fifteen years old—not a root-sucker is to be seen. Dog Rose "stools" under similar treatment would long ago have formed an impenetrable thicket of brambles, formed by root-suckers.

Your readers may pick out, or cut out, the buds of the cuttings as advised. They will find it avail but little if they are unwise enough to graft or bud a weak-growing variety on the Manetti stock, for it is not one bud but a cluster of buds (the germs of which nearly surround the bud picked out), which at once start into life, if the sort budded has not vigour enough to pump up the sap, which in summer is so abundant in this stock.

To show you that I speak from experience, I will in a few words tell you what has been my custom for the last twenty years (it must be thirty since I used to mould-up my cuttings, which I found not to be good practice).

My cuttings are made as follows:—A shoot of the current year's growth, and which is often from 6 feet to 7 feet long, is made into cuttings 9 inches in length; the only care taken in cutting them is to have the cut at the bottom as little sloping as possible, and close to a bud. Cuttings are made and planted during the month of November, the earlier in it the better. In planting them one bud only is left out of the soil, so that 8 inches of the cutting are buried. They are planted in rows, and the earth is pressed very firmly to them. The buds in the stem, owing to being thus firmly covered, all die.* When the cuttings have been a year in the ground—*i.e.*, the November twelvemonth after planting, they are ready to transplant for budding. A few, very few, roots will be found on the stems (for most of them are like the specimens sent—as smooth as your hand), and a tuft of roots at the bottom; these, in transplanting, should be placed 4 inches deep. The following August (budding time) the earth is slightly scraped away, and the bud inserted so as to be within 2 inches or 3 inches of the bottom of the stock.

Under this simple management I find no root-suckers, and after the second year no stem-suckers; but then I only bud varieties that are tolerably free in growth, and mostly Hybrid Perpetuals. I had some pillar Roses of free-growing Hybrid Perpetuals, which were killed by that fatal Christmas frost of 1861; they were nearly twenty years old, and I never remember to have seen, after the first two or three years, either a stem-sucker or root-sucker. They were budded on Manetti cuttings, prepared exactly as I have above described.

The paragraph in page 445 is so contrary to my experience, that I have been tempted to trespass on the patience of your readers. I feel quite certain there is some mistake, and equally certain that you will insert this, although self-correction.—A NURSERYMAN.

[The answer about the Manetti stock was given by me, and I maintain, from my own experience, that it is perfectly correct, and I hesitate not to say that "A NURSERYMAN" is perfectly wrong, both as to the fact of the case and to the theory by which the fact is supported. Moreover, I pledge myself to prove both points to the full satisfaction of "A NURSERYMAN" himself in any London nursery, or in the garden of the Royal Horticultural Society at Chiswick this spring and next summer. But to make plain work of it, I will disbud any Rose-shoot of last season's growth even if it be 20 feet long, or the leading shoot of any tree or plant in our climate, and I will challenge, after doing it, all the practice and all the science of Europe to get one single cluster of buds to grow from any one of them as "A NURSERYMAN" says they grow on disbudded Manetti stocks.—D. BEATON.]

NEW AND RARE PLANTS.

STANHOPEA OCULATA (*Eyed Stanhopea*).

Nat. ord., Orchidaceæ. *Linn.*, Gynandria Monandria.—It has also been called Ceratochilus oculatus. Native of Mexico. Flowers lemon-coloured, with lilac spots and yellow eye. They are almost too powerfully fragrant.—(*Botanical Magazine*, *t.* 5300.)

JOCHROMA GRANDIFLORUM (*Large-flowered Jochroma*).

Nat. ord., Solanaceæ. *Linn.*, Pentandria Monogynia.—This stove plant has also had the specific name Warczewiczii, and the generic name Cleochroma, with its present specific name. Native of Escuador and Peru. Flowers large and purple. Blooms in November.—(*Ibid.*, *t.* 5301.)

LIGULARIA KÆMPFERI, AUREO-MACULATA (*Golden-spotted Kæmpfer's Ligularia*).

The well-known *Farfugium grande* proves to be no other than this plant recorded as a Japan plant ever since the days of Kæmpfer; but described under many other names, such as Tussilago japonica, Senecio Kæmpferi, Arnica tussilaginea folio, Doronicum tussilaginis folio, and Farfugium Kæmpferi. Dr. Lindley first called it Farfugium grande. Flowers yellow, blooming in December.—(*Ibid.*, *t.* 5302.)

ENTOMOLOGICAL SOCIETY'S MEETING.

THE Anniversary Meeting of the Entomological Society was held on the 27th of January, and we have to regret that we should have to record that the usual unanimity which has prevailed at the anniversary meetings of this Society was not maintained on the present occasion, the nomination of Officers, and the alteration in the Council, proposed by the Council at the previous meeting of the Society, having been out-voted, and Mr. Frederick Smith, of the British Museum, having been elected President, and Messrs. Shepperd and Dunning Secretaries for the ensuing year.

J. W. Douglas, Esq., whose period of office, as President (confined to two years by the bye-laws of the Society), had expired, delivered an address on the state of the Society, and on the progress of Entomology, which was ordered to be printed.

The February Meeting was held on the 3rd ult., F. Smith, Esq., the newly-elected President, in the chair. After returning thanks to the Society for his election, the President nominated Messrs. Pascoe, F.L.S., John Lubbock, F.R.S., and Wm. Wilson Saunders, Esq., F.R.S., Treasurer to the Royal Horticultural Society, &c., to act as Vice-Presidents for the ensuing year.

Mr. Stainton made a personal explanation with reference to the result of the election for the President and Officers at the anniversary meeting, which was considered highly satisfactory by the numerous members present; and the President announced that the Council had resolved not to accept the resignation of several of the members which had been forwarded to the Society, trusting that Mr. Stainton's explanation would induce them to withdraw their proposed notice of secession from the Society. It is, moreover, understood that the state of the Society's collection will undergo a rigorous investigation, so that no ground may remain for the complaints which have lately been made by various members upon that subject.

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* I enclose a one-year-old cutting, one out of 300,000. You will see that I "speak by the book."

Mr. J. Lubbock exhibited a drawing of a very remarkable dipterous larva, which he had found under decaying logs of wood. Professor Westwood, to whom it had been submitted, suggested that although of an unknown form, it appeared nearly related to the genus Platypeza.

Mr. Stainton exhibited the pupa of one of the species of the curious genus of little metallic Moths named Micropteryx, which had by some authors been regarded as probably belonging to the order Trichoptera. The pupa in question, however, satisfactorily determined the lepidopterous character of the genus.

Mr. Ianson exhibited seven species of minute coleopterous insects new to this country.

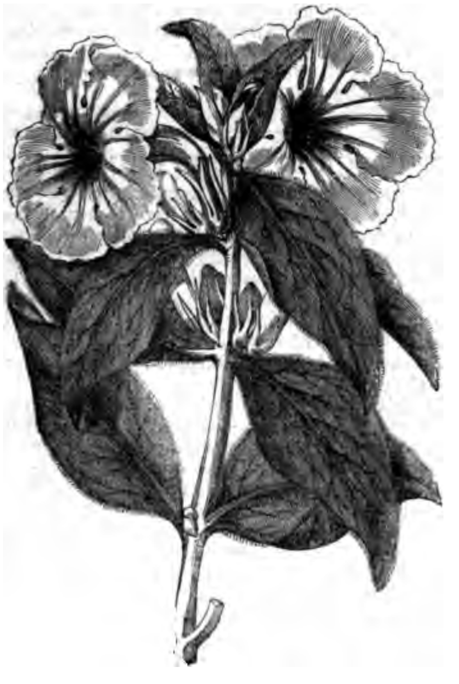
Captain Russell gave an account of the capture of several species of Lepidoptera, of very great rarity in this country, including Argynnis Lathonia, Eulepia cribrum, and Callimorpha Hera (a beautiful kind of Tiger Moth), of which he had captured five specimens on a Bramble bush between Rhuabon and Wrexham, in North Wales, on the 27th of July, 1859. One of these specimens he had presented to the British Collection in the National Museum. He also exhibited a beautiful variety of the common Tortoiseshell Butterfly, resembling that figured by Mr. Humphries, in "British Butterflies," pl. 13, fig. 13, taken in Suffolk. A variety of Lycæna Phlæos, with longitudinal pale stripes on the lower wings was also exhibited.

Mr. Bye read the descriptions of a species of Rove Beetle (Lathrobium geminum) hitherto unrecorded as British, although long confounded with the common Lathr. elongatum.

Mr. Crotch also described a species of Dermestes, D. Frischii, allied to D. vulpinus, new to this country, of which he had taken a specimen in the New Forest, under a dead horse.

ORNAMENTAL PLANTS.

Dipteracanthus spectabilis (*Handsome Dipteracanthus*).—*Nat. Ord.*, Acanthaceæ. *Linn.*, Didynamia Angiospermia.—This is the largest-flowered and most showy of the genus, and

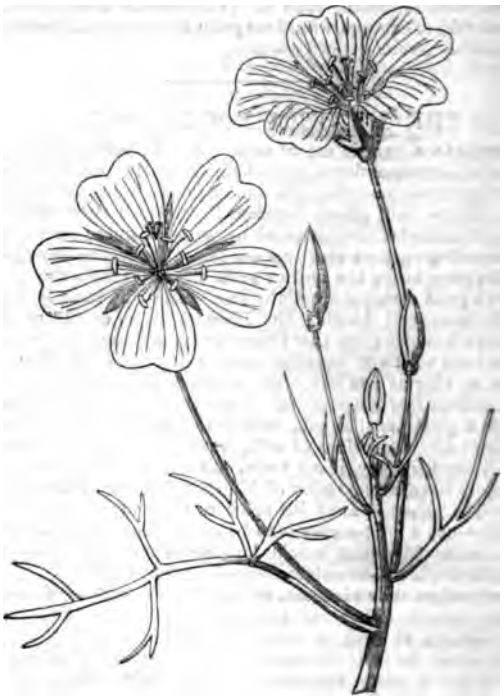


[illegible] of cultivation by all who have a stove or warm greenhouse. [illegible] flowers are deep purplish-blue, with linear markings of [illegible] deeper hue. It was sent to Messrs. [illegible] itch [illegible] the [illegible] their collector, Mr. [illegible]

Mr. Smith, of Kew Gardens, has published the following directions for its cultivation:—

"A soft-wooded plant of herbaceous aspect, growing from 1 foot to 2 feet high. It is a native of the temperate climate of Cuença, in Peru. It is found to succeed in a temperature intermediate between that of the stove and greenhouse, and grows freely in any kind of light garden soil. Like many of the tropical Acanthaceæ, after flowering it soon becomes thin and naked. It propagates freely by cuttings. The young plants should be kept in small pots during winter, and receive very little water. In the spring they require to be shifted into a large pot, where they will soon make rapid progress, and produce a succession of large fine blue flowers."

Limnanthes rosea (*Rose-coloured Limnanthes*).—*Nat. Ord.*, Tropæolaceæ. *Linn.*, Decandria Monogynia.—A hardy annual plant, with prostrate branches, bearing leaves of variable form,



the parts being all linear; sometimes they are quite simple, sometimes pinnately divided, and at other times cut in a bipinnate manner. The flowers are axillary, growing singly on longish upright stalks, and consist of five obcordate petals, of a pale dull rose colour. It is not very showy, and should be grown in a dampish, cool place.—From California: swampy places in the valley of the Sacramento; introduced in 1848, by Mr. Hartweg.

If sown in the autumn it flowers in the May following, and if sown in the spring flowers during the summer of the same year.

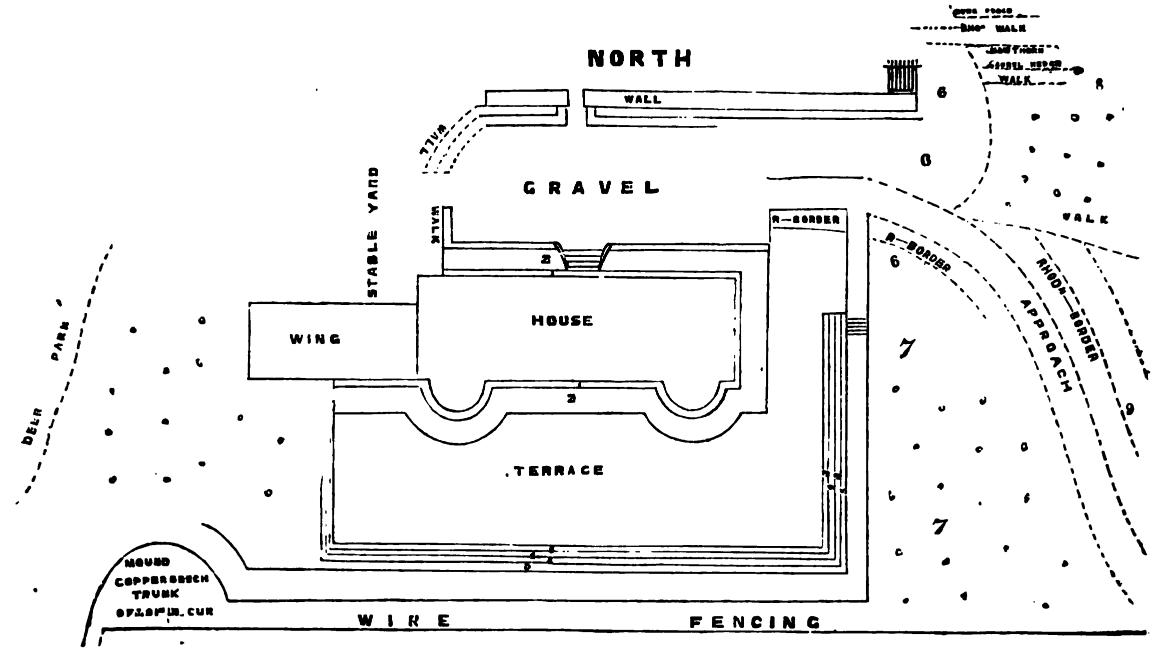
A FEW DAYS IN IRELAND.—No. 16.

(*Continued from page* 460.)

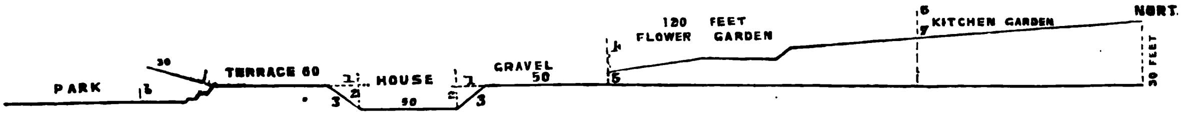
BALRATH.

On returning to Kells from Lough Crew we took a different route, and crossing a corner of Westmeath, found that it pretty well equalled Meath in the luxuriance of its grass meadows. The numbers of cattle that not only feed but get fat on a certain limited space would thoroughly surprise some of our English and Scotch farmers. We noticed on the drive little of agriculture in the general acceptation of the term; little of arboriculture as developed in woodland scenery, except near the residences of gentlemen; and although we saw much in the state of the fences needing improvement, whether regarded as effectual divisions of fields, or as reserves of timber and fuel, we could [illegible] admire the [illegible] macadamised roads kept up without tollbars ever and anon staring you in the face, and therefore without any need of Rebecca insurrections; and we could not but rejoice in the deep, rich herbage, which spoke of the great wisdom of making such lands cattle-supporting instead of corn-producing. We felt pretty well tantalised from the account given us of places which we could not visit; and even of those seen in that neighbourhood, we must for the present be content with alluding to the one placed at the head of this article.

Straight and regular well-kept fences and good-sized enclosures, bounded by somewhat straight lines, instead of small crinkum-crankum corners, with brushwood occupying as much space as herbage, are ever pleasing signs of improvement. These signs of progress at once present themselves on entering the demesne of Balrath, about the centre of which is situated the delightful residence of John A. Nicholson, Esq., the house standing near the front of an undulating slope two miles from Kells, nine from Oldcastle, and ten from Navan, and surrounded by 2000 acres of the richest grass lands to be found in, in this respect, the unequalled county of Meath. Besides other properties belonging to the same patriotic gentleman, encouraging landlord, and extensive and liberal employer of labour, the home demesne is almost a circle, having a diameter of three miles and a half, with the mansion situated nearly in the centre; and for carrying on the works and improvements on such a demesne thirty cart-horses are employed, and a large corresponding sum spent in the wages of labour.



1, Drain, forming an eighteen-inch walk.
2, Sloping bank.
3, Sloping steps, 18 inches.
4, Level step, 18 inches.
5, Level verge.
6, Very large and fine Portugal Laurels.
7, Large Horse Chestnut and Flowering Ash.
Marks thus ° Scarlet Rhododendron.
8, Large common Rhododendron.
9, Portugal Laurel Hedge.



1, 10 feet.
2, 4 feet 9 inches.
3, 9 feet.
4, Balustrade, height 8 feet.
5, Cotoneasters, wall 5 feet.
6, Cotoneaster hedge.
7, Old vinery, height 8½ feet; breadth 12 feet inside.

On crossing the park to the mansion from the cottage of Mr. Ramsay, the able manager, we were struck alike with the freshness of the herbage, the stateliness of many grand trees, and the size and picturesque effect of numerous old Thorns, which must be glorious in June when in bloom, and lovely in autumn when bending with the weight of their fruit. Neither here nor in other parts, however, had we time to see the grandest results which such ground could yield in herbage. We understand that the whole land of the demesne has, for the most part, passed through a thorough process of renovation and improvement. The system adopted and found to be the most remunerative is the following:—Properly speaking, there has been little or no attempt at corn-cropping. When the herbage in fields became rough and deficient in feeding power, or the fields were small and irregular, with a bog spot here and a Rush corner there, the ground was all broken up, inequalities levelled, thorough drainage effected, and cleaning accomplished by ploughing, harrowing, and fallowing; and then, when the soil was almost like an Onion-bed, a heavy manuring was given, and the ground laid down again with the best grass seeds; several fields being often thrown into one, so that now they range from 30 to 200 acres in extent. The produce of such fields we would rather that Mr. Ramsay and other persons on the spot would tell; of course, with our drier climate, we could not often reach such results on this side of the water.

Striking as the timber and old Thorns appear when passing through them, they become more interesting when, on reaching the grass terrace in front of the mansion, they arrange themselves in diversified groups. For a rather level view the landscape is fine, depending first on a mile and a half rich park and timber scenery within the demesne, and then through openings extending over these, and the level country stretching out to and beyond Dublin for more than forty miles. The views from the higher windows must be grander still. We were told of some fine glades and slopes which we did not see. The woodland scenery from that terrace takes in a great extent of country, though that immediately in front may be the finest. The front faces due south; the west and south-west are bounded by ornamental grounds, the deer park with its old church and ruins, and rich plantations. The main approach gracefully winds up the east side, but concealed from the terrace by fine trees of Chestnut and Flowering Ash, good plants of Holly, and magnificent specimens of Portugal Laurel. One marked thus "6—" on plan, forms a sort of alcove over the walk and is of great size, hiding all parts of the terrace from the approach there; another on the north side of the approach, marked ×, is 30 feet in height and 50 feet in diameter of head—a dense, symmetrical mass, with the lower branches resting on the green lawn.

This beautiful grass terrace, level as an unruffled lake, and almost as smooth as a polished slab of marble, is 216 feet in length, and 60 feet in breadth, and 30 feet more from the slopes to the elegant iron fence which surrounds the more ornamental grounds. The walk proceeds on this lower level, and at the south-west corner turns round a fine Copper Beech tree. There was just to us one drawback as we looked upon the rich views from it, and enjoyed the carpet-like tread upon it—the terrace is so elevated as to be not only higher than the sloping park, but considerably above the base of the lower windows in this principal and more private front of the mansion; and this necessitates at present a longish slope of turf from the level of the terrace to the wall of the house. We know that the terrace is as comfortable and dry as possible—a great thing in such a dripping climate; and we saw abundant signs that it forms a favourite game and romp ground for the junior members of the family. Being on the same level as the gravel at the north entrance is also an advantage, because no steps or slopes are needed in passing from one to the other; still, it can hardly be doubted that the raising the terrace so much above the base of the lower windows, whatever the use to which the rooms inside are applied, and whatever the other advantages of the terrace itself, just lessens so much the architectural dignity of the mansion.

We recollect visiting a celebrated place, the mansion of which being in a low position, and the approach rather descending to it, dignity of expression was sought and said to be given to it by raising the ground sufficiently in front so as to make the entrance-hall on the first floor instead of the ground floor as before. Perhaps we expected too much, or were too ignorant sufficiently to admire the much-lauded performance which seemed a somewhat bungling affair at best; not that we did not like the raising of the entrance. What seemed to us unfinished was, that the raising was confined chiefly to the centre, and the ground sloping on each side from it. The windows on the lower floor were not only seen from a distance, but some of these from the sloping ground were cut by the ground level into triangular instead of square shapes, so as to give to the whole a make-shift unfinished appearance. Either the ground should have been raised along the whole front, or a balustrade should have been raised sufficiently high to conceal the windows and the area in front of them; or, if part of these were shown at all, something like a level architectural line ought to have been observable. Now, there is nothing of this diagonal cross-cutting of windows to be seen from the level terrace at Balrath; but we could not help wishing either that the terrace had been lower, or, that instead of the deep slope of turf now seen to the wall, an ornamental balustrade should have been built there to conceal these slopes altogether; or, in other words to conceal from the terrace an open area there. A similar-styled but low balustrade round the terrace would give a uniqueness and high-finish to the whole, and then this beautiful terrace might remain lawn as it is, or be turned into a panelled artistic flower garden.

The position of the present flower garden, north of the mansion (see section), full to overflowing with floral beauty, is another of the striking singularities of Balrath. If flower garden there is to be near the house, we would, perhaps with preconceived notions and prejudices, wish to see the positions reversed in order to secure grandeur of effect. Many things, however, ought to be considered before that fine grass terrace is broken up into a flower garden. It is almost a relief to find a place now not surrounded with flowers. The principal rooms are, we presume, on that side of the mansion, and at present will have all the advantages of privacy and repose. The rich woodland scenery may also be more thoroughly enjoyed from there being nothing more gaudy near at hand to arrest and divert concentrated attention. Leaving summer out of view, hardly any possible arrangement of flower-beds in winter could be more pleasing to the eye when seen continuously day after day, than a green level lawn in the foreground. Any flower-beds should be sunk in panels so as not to interfere with the more distant scenery. The feeling of privacy will be best secured by a lawn, as the necessary work may be all done in a morning. These are not the days for solitary hermitings, still the very increase of the bustle and activities of life render it alike pleasing and desirable, that opportunities be given for retiring from communings with men, and amid the soothing and hallowing influences of the beauties of nature, to hold unrestrained questionings as to the feelings and desires of our hearts, the conduct of our everyday life, and how these affect our thankfulness and submission to Him who gives to providence its laws, and to nature its rules as well as its splendours.

The width of the gravel, 50 feet by 120 feet, at the north entrance, gives the impression of ease and roominess. It is on the same level as the grass terrace, and, notwithstanding the recent rains, was firm, dry, and level. It is bounded on the north by the flower garden, but separated from it by a handsome wall some 4 feet in height, and an upright iron pallisade on the top of it, altogether more than 8 feet in height. This wall is 196 feet in length, and is covered from end to end with a dense clothing of the Cotoneaster microphylla, pretty at all times, but chiefly beautiful in winter when studded with its red Holly-like berries. The flower garden is 120 feet deep from south to north, in front the width of the fence, and 260 feet at back. The kitchen garden lies north of the flower garden, and is a square within walls of 100 yards to the side, with half as much more of a slip on the east side, and is well cropped and managed.

Eastward of these is what is called the grove—apparently an old wood some 500 yards in length, and 160 yards in breadth, from which all the trees except the finest specimens have been removed, and the ground cleared and enriched and turned into an American garden. This is surrounded and also divided into four parts by massive hedges of the common Laurel, ranging from 10 feet to 14 feet or more in height. The first division is devoted to scarlet Rhododendrons well stored with flower-buds, many of them are 9 feet in height, and from 10 yards to 15 yards in circumference at the base. Here is a magnificent plant of the common Rhododendron that threatens some days to monopolise the division to itself. It was, on the 16th September, 13 feet in height, 56 yards in circumference, at the base sweeping the ground, and so compact and full of flower-buds, that in all that space there was scarcely an opening to let the hand in. The subdued shade of the Laurels and a few larger trees seemed to suit these plants well. The second division was devoted to Kalmias; the third to Azaleas; and the fourth to different coloured Rhododendrons, Andromedas, &c., in beds.

The north side of this grove is bounded by the Rhododendron-walk more than 400 yards in length, and which communicates with the kitchen and flower garden on the west side. The Rhododendrons are not the sole features here. A lofty Laurel-hedge, not stiff and formal, but with a sweeping, graceful outline, bounds the walk on the south side, leaving a wideish, irregular verge of lawn between it and the walk. On this verge, at something like regular distances, stands a row of fine old Thorn trees; and these, either from training or from the free access to light on the north side, bend and droop over the walk something like a regular archway. The north side is ornamented with a dense mass of Rhododendrons, and a sunk fence separates them from a rich paddock in which favourite stock is reared. This is bounded by the road between Navan and Oldcastle. That walk must be a picture in early summer. We may here mention that south-west of the mansion the plantation between it and the deer park is being thinned out for introducing more masses of Rhododendrons, which, as they thrive so, may well be favourites.

On entering the kitchen garden, among other objects of interest is an ancient Peach tree, which has a house for itself 32 feet long, 12 feet high, and 7½ feet wide. The age of the tree is uncertain, but it has filled that house and produced annually heavy crops for more than forty years. Mr. Ramsay assured us that to his own knowledge it had been heavily cropped for ten years, and yet produced fruit from 6 ounces to 9 ounces in weight. It is the Royal George kind. On measuring we found the girth of stem fully 3 feet. We were sorry to see signs of giving way on one side.

Lower down southward is placed the middle range of houses, 108 feet in length, 10 feet wide, and 10½ feet high inside. This is divided into three divisions. The centre used to be a conservatory, with a Peach-house on one side, and vinery on the other. The centre is now also turned into a vinery, but has a fine old white Camellia in it, with rich shining foliage, height of head 6 feet, diameter of head 8 feet, full of strong, healthy flower-buds. The Peach trees had beautiful wood, and the Vines, if anything, too heavy a crop; but we can say little on that subject, being a very frequent transgressor. Both Peach trees and Vines in these houses are very old, not even the "oldest inhabitant" can tell anything of their age. Will nobody tell us the secret, not so much as to their age, but as to how to get the trees, Peach trees especially to live so long and thus continue healthy, seemingly, for ages?

The kitchen garden is divided from the flower garden by a beautiful hedge of Cotoneaster microphylla, about 5 feet in height and 130 feet in length, which has a very striking effect, and by one house more 52 feet in length, 13 feet in width, and 10 feet in height, and which is noteworthy as the oldest vinery in Ireland. The exact date of its erection is lost amid the mists of the past. The house has been recently thoroughly repaired, and fresh Vines planted, which are doing well. Besides frames, the only other glass structures we noticed were the brick pits 30 feet by 8 feet, used chiefly for bedding and other plants in winter, and Melons and Cucumbers in summer. We also noticed what was not less useful—a new soft-water tank, 33 feet by 10 feet, and 8 feet in depth.

Farther than the allusion already made to the rich masses of bloom, we must not linger on the flower garden placed in this somewhat singular position. It struck us that few ornamental grounds would be more improved by the introduction of some of the more spiral of the Pine tribe. Perhaps we failed to see them, or as yet they may be so small as not to arrest attention, but certainly we did not perceive that charm of variety which they always produce among flat, lumpy-headed trees and shrubs. Variety is ever delightful. We could live but poorly on poetry and song, but both do much to enliven the prose of existence.

It struck us that among the labourers and workmen there was the appearance of a cheerful, active, well-to-doism, creditable to their own thrift and self-denial, and indirectly showing how much the landlord and his family are interested in encouraging whatever will increase the comfort and happiness of their humbler neighbours. Facts bearing on social economics may be mentioned at some future time, without specifying directly persons or places. Wretchedness and misery exist but too truly, and that in all lands, and quite as much in Britain as in Ireland. But for infringing the above rule, and so far breaking confidence, we might have shown that these working-men at Balrath, and many more or less like them, paying their three-halfpence per working day for a comfortable home and a large garden (no rent being charged for Sundays and holidays), possessing a cow and their young stock, so as to be able to sell a two-year or three-year-old beast yearly, paying £3 10*s.* for grass for cow, and in proportion for younger cattle, and hiring land for hay and other purposes from farmers at a price which we hardly could expect to be credited if we mentioned it, and making all subserve to their comfort, and the stepping-stones to still greater improvement; and then it might be apparent that there were growing and general exceptions to that wretchedness which some still delight to gloat over, just because they will see nothing but darkness in sunshine, and can perceive no means for raising themselves into notoriety but by croaking and prophesying about misery, and invoking others to lessen the wretchedness which they themselves will do nothing to alleviate. Talk, talk—words, words—are empty froth. We want the benevolence that speaks in deeds, and, though never insensible to the wail of woe, is less anxious to assist improvidence than to encourage self-reliance and manly independence. But we must finish by saying that the few hours we spent at Balrath will be sunny spots in memory's recollections. R. Fish.

MISTLETOE CULTURE.

The Mistletoe may be grown in any climate upon the Apple and Crab stock, if rightly sown. The seed should be squeezed fresh out of its capsule and applied to the smoothest, healthiest part of the bark. No incision should be made near it, nor should it be secured otherwise than by its own natural gluten, which hardens and fixes the seed in a day or two. It is about a year before it shows its two first leaves. Many seeds are rubbed off by accident, and many more are taken by the birds; but if plenty of seeds are sown in the manner I describe, I feel sure your correspondent of February 18th, will in a few years have plenty of Mistletoe. It grows well on Poplar and Hawthorn, but on the Oak it is very shy, as it wants a soft wood as well as bark, as the roots penetrate into the very heart of the tree, and often the tree on which it lives is killed by the roots passing through the pith. I have seen twice a large Apple tree killed by one root of Mistletoe, which in each tree was sown on the main stem, and I should always sow on the branches on this account. I speak from experience, having grown the Mistletoe in moist and dry climates.—Henry Williams, *Croxton Vicarage, Thetford.*

THE CALIFORNIA CONIFERS.

No other State of the Federal Republic can boast of such magnificent and grand specimens of trees of the order Coniferæ, or Pine family, comprising Pine, Cypress, Yew and Cedar trees, as California. The twisted Pine, *Pinus contorta*, a specific name suggested by the appearance of the trees, is of moderate size, conical figure, branches numerous and small, leaves in twos, short and of yellowish-green colour; cones of about an inch in length. The tree grows to the height of about 60 feet, with a trunk about a foot in diameter 3 feet from the ground. It is found scattered and dwarfed to the altitude of 6000 feet; it resembles the Jersey Scrub Pine, P. inops, common on the barren and sterile hills from New Jersey to Kentucky.

The western Yellow Pine, *P. ponderosa*, is the most common of the Pine family in both California and Oregon, and in some localities it is the only species of the Pine found. Its range is from New Mexico to beyond the Columbia River northward, and from the Pacific to the Rocky Mountains eastward. It is a noble tree, though never rivalling the gigantic Sugar Pine; it is often found 6 feet or 7 feet in diameter 3 feet from the ground. Near the base of Mount Jefferson, in Oregon, one was measured 3 feet above the ground, that showed a circumference of 25 feet. The leaves are in threes and from 4 inches to 10 inches in length, and radiating in all directions, giving the branches of trees a tufted appearance; colour a yellow green. The cones are from 3 inches to 6 inches in length and of ovoid form. The seeds are about the size of Apple seeds. The bark of the trunk is a yellowish-brown: the wood is resinous and brittle.

Sabine's Pine, also called Nut Pine, or Withe Pine, *P. Sabiniana*, is not an important tree in a timber point of view. It is disseminated over California; but nowhere forms forests of its own species. The tree is not of conical form like most of the Conifers, but is divided into spreading branches, and resembles somewhat the Oak in form. The leaves are a pale blueish-geeen: cones solitary and of ovoid form, as large as a man's head, and are covered with spurs. The seeds are the size of large Beans and quite palatable, and find a place among the delicacies of the table. The Indians depend largely upon the cones of this species of Pine for the means of food, after their more desirable aliment, the grasshoppers, have disappeared. It is recommended as an ornamental tree, and as being worthy of cultivation.

The Sugar Pine, *P. Lambertiana*, is a magnificent tree, and is disseminated between the Pacific and the Rocky Mountains, and from the Mexican line to near the Columbia River; it is found mingled with other species, but nowhere forming a forest of itself. It is closely allied to the White Pine, P. strobus, of New England, though greatly superior in its symmetry and perfection of form, as in size and vigour of growth. They grow to the height of more than 300 feet, and are found, though rarely, of more than 20 feet in diameter. 200 feet in height and 10 feet in diameter are common dimensions of this magnificent species of the Pine family. Its foliage is light, and the branches are sparsely set, resembling the festoons of Ivy which wreath the columns of the ancient ruins of the old world. Its leaves are in fives, and are almost 3 inches in length, and of a dark blue green colour; a forest of such trees would constitute the lumberman's paradise. The resinous exudation is transparent and white, like that of the common White Pine. It is sweet, and hence the reason for the name, which is common throughout the Pacific region. It is, however, said to be used more frequently as a cathartic than as a condiment.

The American Cembra Pine, *P. cembroides*, grows to the height of 50 feet, with a diameter of 2½ feet; the bark of the trunk is white, rough, and thin, resembling somewhat that of the White Oak, Quercus alba. The wood is flexible and tough, the leaves in fives and of a blueish-green. The cones are small and not easily found. It abounds only at the extreme limits of vegetation, at an altitude of 6500 feet and upwards.

The western Balsam Fir, *Picea grandis*, is found in the Sierra Nevada of California, near the southern line of the State, and as far north as British America. It is more spreading than most Firs, less conical and broader near the tops. The trunk is straight and smooth in dense forests, and furnishes lumber of good quality. It is called the White Fir on the Columbia and Williamette, to distinguish it from the Red Fir, Abies Douglasii. The lumber exported from Oregon is derived largely from these two species of the Pine family. The former species grows to the height of 200 feet.

The White Fir, *Picea nobilis*, is a large tree; branches short, rigid; leaves in rows, short, curved upward, rigid, and of a pale green colour. It is not deemed valuable for lumber. It has been introduced into England. The western Silver Fir, *P. amabilis*, is found in the Cascade Mountains. The wood is white, and is inferior for timber. It is an inhabitant of the almost inaccessible mountain regions. The tree in form is a dense, slender spire of dark green foliage, is of great arborescent beauty, and is cultivated in England as an ornamental tree.

Williamson's Spruce, *Abies Williamsonii*, is a tree of large size and of alpine habits; foliage resembling that of the Larch, leaves pendent, 1¼ inch in length. It is the finest Fir of the genus, and extends to the line of perpetual snow. It grows to the height of 100 feet. Douglas's Spruce, *A. Douglasii*, is large, and one of the best-known trees of the Pine family on the Pacific coast. It formerly attracted the attention of the exploring botanist, and was sent to England, where it has been cultivated. The cones are pendent. It is one of the giants of the forest; it attains the height of 300 feet and more. It forms forests of the most extraordinary density. Its foliage is confined to a tuft at the top, its trunk being as straight as an arrow. The lumber per acre of the Douglas's Spruce is said to far exceed that of any other equal area on the globe. In the Williamette valley a Spruce of this species, 6 feet in diameter at the stump, measured 216 feet where the top had been burned off, and was 15 inches in diameter at the extremity. The wood, as is true of most of the Spruces, is harder to work than Pine, but is excellent timber for planking, joist, &c. The Douglas Spruce covers the western slopes of the Cascade Mountains, and the banks of the Columbia River. It extends northward on the Sierra Nevada, and to the line of Mexico.

Menzies' Spruce, *Abies Menziesii*, has been introduced into Europe, where it is cultivated. It is not so large as A. Douglasii, but is a symmetrical and beautiful tree. Its foliage is rigid, and pricks when brought into contact with the skin like needles.

The great Arbor Vitæ, *Thuja gigantea*, is said to be the finest species of the genus known to the botanists. Its foliage is beautiful. It is abundant in Oregon. In size it is scarcely inferior to the Sugar Pine or Douglas's Spruce.

The Redwood, *Sequoia sempervirens*, is only second in size, and is called the first in importance of all the trees in California, though not far surpassing the Sugar Pine. It is said to nearly equal the *Sequoia gigantea*, designated the "Mammoth Tree." Professor Lindley, of England, considered the latter as forming a new genus, and called it "*Wellingtonia gigantea*." It makes excellent timber. Its foliage, as common among its congeners, is dimorphous on young trees—*i.e.*, assuming two crystalline forms, leaves long, resembling those of the Cypress and Yew trees. Its cones are elliptical, and 2½ inches in length. Its timber is valuable. It splits well, and may be converted into plank without a saw. Resinous like the Cedar, it is, therefore, very durable when exposed to the weather. It is regarded as one of the most extraordinary trees of the Pacific coast.*

The Western Juniper, *Juniperus occidentalis*, closely resembles the J. virginiana of the Atlantic States, differing from it by bearing larger berries, producing more glandular and resinous leaves, being also less acute; the wood differs by being white, thus not resembling the fragrant wood of the Red Cedar. Its diameter is 3 feet near the ground, and is 40 feet in height. Its fruit is sought by some species of birds.

The Western Larch, *Larix occidentalis*, is large, tall and slender, branches short and small, leaves long and delicate, cones ovoid, 1¼ inch long. It is unlike the Hacmatack of the Atlantic States in its general appearance. It grows along the streams, and also rises to the height of 150 feet, with a diameter of 3 feet; foliage light and feathery, and a pale blueish-green.

The Western Yew, *Taxus brevifolia*, differs essentially from the Atlantic species in its arboreal habits, frequently growing to the height of 75 feet; foliage thin and a yellow green. It differs also from the arborescent Yew of Europe. It is found on the Sierra Nevada, down to the southern part of California.

The California Nutmeg tree, *Torreya californica*, is a rare tree in California, growing to the height of 75 feet, and resembles the Yew. Its fruit is used as a condiment. It is a graceful tree and will be introduced into cultivation.

The Nootka Cypress, *Cupressus nutkatensis*, is a tree of moderate size, branches sub-erect. It is found in the Cascade Mountains, and resembles the Thuja occidentalis; the trunk is gradual and twisted, and set with dead limbs; foliage sparse and rugged, and presents an uncomely appearance. Its habitat is near the snow line.

The California White Cedar, *Libocedrus decurrens*, is common over California and South Oregon. It rivals the Sugar Pine in diameter though not its equal in height. It attains the diameter of 7 feet. It resembles the Thuja occidentalis about Lake Superior. It seems to be affected by a kind of dry rot, whereby its trunk has a honeycomb-like appearance, rendering it valueless for timber. Its fruit is pendulous.

In preparing this sketch of the Pine family of the Pacific coast, we have been indebted to Dr. Newberry's botanical report, a part of the Pacific railway survey. All who have read of the mammoth trees of California have become interested in the wonderful Pines of the auriferous State. The grove of mammoth trees is situated on the ridge between the San Antonio branch of the Calaveras river, and the north fork of the Stanislaus river, lat. 38° north, and long. 120° west, at an elevation of 4370 feet above the level of the sea, and ninety-seven miles from Sacramento city. Some of our readers may recollect of having read accounts of a cotillon party of thirty-two persons, engaged in dancing four sets of cotillons at one time on the stump of the "mammoth tree," Sequoia gigantea, besides musicians and lookers-on. The stump, 5½ feet from the ground, measured more than 28 feet across it. Five men were employed twenty-two days in felling the tree with pump-augers. When cut off, so erect was the trunk that it stood upon the stump; and about two and a half days were spent in driving wedges until the monarch of the forest fell. It is supposed to have stood nearly 3000 years. The "Mother of the Forest," as it is called, had its bark removed to the height of 116 feet, and now measures 84 feet at the base; 20 feet from the base it measured 69 feet; 70 feet from the base, 43 feet and 6 inches; and 116 feet upward, 39 feet and 6 inches. Its height was 321 feet; and the tree is estimated to contain 537,000 feet of inch lumber.

The "Father of the Forest" lies partially buried in the soil, and was the largest tree of the group. In circumference at the roots, this tree measured 110 feet, and 200 feet at the branches. It is estimated to have been 435 feet in height; 300 feet from the roots, and where it was broken off in falling, it is 18 feet in diameter. Near by are the "Husband and Wife" leaning against each other. "Hercules," another giant, is 320 feet high, with "I. M. Wooster, June, 1850," cut upon the trunk, showing that he had the precedence over Mr. Dowd in the discovery of the famed "mammoth grove." The "Hermit," a lonely old fellow, is 318 in height, and 60 feet in circumference. The "Old Maid," a stooping forlorn-looking spinster, of the big tree family, is 261 feet in height, and 59 feet in circumference. The "Old Bachelor," a lonely and solitary specimen, exceeds the "Old Maid" in size, being 298 feet in height, and 60 feet in circumference. Besides these there are the "Pioneer's Cabin," the "Siamese Twins," the "Guardian," "the Mother and Son," "Horseback Ride," "Uncle Tom's Cabin," the "Pride of the Forest," the "Two Guardsmen," the "Three Sisters," or as called by some, the "Three Graces," the most beautiful group in the grove. Could this wonderful historical group turn historians, they would a marvellous tale reveal, far more interesting than the delightful one of Mr. Tirrell, the artist, from which we have drawn the foregoing statements of the dimensions of the mammoth grove of California, which so far exceed that of any other of the explored regions of the globe.—(*Boston Cultivator.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

The recent dry frosts and cutting winds, though unfavourable to vegetation, have afforded a very seasonable opportunity for forking over ridges, wheeling on manure, and trenching-up vacant pieces of ground. As the soil is now in fine condition, the committal of seed to the earth should be vigorously followed up on all suitable occasions. *Artichokes*, make new plantations, [illegible] Broad Beans the advancing crops in have more earth drawn up to them. *Brussels Sprouts*, make a small sowing, as also of Borecole and Green Savoy. Attend to the pricking-out Cauliflowers, Cabbages, and Lettuces, as they are likely to be very much in request by-and-by. *Carrots*, the main crops may now be sown where the ground has been trenched and the surface soil is in a mellow state. Keep up successional sowings of Lettuces, Radishes, Spinach, and small salading. *Mushrooms*, keep up the heat of the house, if the beds are in full bearing, to about 60°; retain a moist atmosphere by watering the paths and flues. *Onions*, sow the main crops, as also Parsnips and Leeks. *Peas*, the advanced crops to have more earth drawn up to them, and some branches of spruce fir or other such sheltering material stuck in on the windward side of the rows. *Potatoes*, attend to the planting while the ground is in such a fit state for so doing. *Rhubarb*, make fresh plantations, as also of Sea-kale. *Turnips*, sow the Early Dutch in a warm situation.

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* The *San José Tribune* says that Colonel Howard, who has recently visited the locality of the "big trees," has furnished that paper with the accurate measurement of some of these vegetable monsters, which with their respective names are as follows:—

"Hercules, 27 feet 10 inches diameter; Pioneer's Cabin, 27 feet; Pride of California, 25 feet 3 inches; Mother of Forest, 20 feet 8 inches; Guardian, 0 feet; Miner's Cabin, 19 feet 5 inches; Big Tree, 8 feet from the ground, feet 8 inches; 30 feet from the ground, 14 feet 5 inches."

These measurements were fairly made, a sufficient distance above the [illegible]

FLOWER GARDEN.

Get soil and pots in readiness for potting Carnations, for which mix up three parts good turfy loam, two parts well-rotted cowdung, and one part rough sand and charcoal together, and remove it into the potting-shed. Lawns, or portions of them, that are apt to burn in summer, would be benefited by a top-dressing of some good strong soil in a well-pulverised state. The pruning and top-dressing of Roses will require attention. Plant Lily of the Valley. Plant out Pansies, Carnations, Wallflowers, Sweet Williams, Canterbury Bells, Daisies, Pinks, Scarlet Lychnis, Columbines, &c. Sow Wind Anemone for autumn blooming, and attend carefully to the sowing of showy annuals and perennials. Do not forget Mignonette and Sweet Peas. Look over all recently-planted trees and shrubs, for the purpose of ascertaining whether they are securely tied and staked; for if such operations are neglected, and they are blown about by the boisterous winds of this month, they will suffer irreparable damage at the roots. Proceed with all operations that involve the necessity of wheeling or removing earth. Roll and sweep lawns; clean, or turn gravel walks where necessary. To eradicate weeds there is nothing like hard labour. Fork over flower-beds, to get the soil in good condition for the reception of the bedding-out plants. On the first dry day the Tulip-beds should be carefully gone over, breaking the surface soil with the hand, so that all interstices may be filled up.

STOVE.

Continue to increase heat and humidity, making use of the engine or syringe pretty freely. Stop in time all rank and unruly-growing shoots. Clear away dead leaves and faded blossoms. Water with care, and give air at all favourable opportunities. Make cuttings of the various sorts of Begonias for blooming in November and December. The Amaryllids in flower will require a rather liberal supply of water; but great care to be taken not to overdo it. Growing Orchids will require hading for a couple of hours during bright sunshine.

GREENHOUSE AND CONSERVATORY.

Any Camellias that have bloomed in the conservatory, if mis-hapen or getting too large, may now be cut-in; and, if afterwards placed in a sweet, growing, moist temperature of from 0° to 65°, they will soon break afresh and make fine plants; syringe them daily once or twice, and, if necessary, give a little manure water. The same treatment may be adopted with the Chinese Azaleas; and, if the shoots are stopped twice or thrice uring their growing season, fine bushy plants will be produced. Heaths may now be shifted; use plenty of drainage and sandy eath soil full of fibres, the ball to be thoroughly moist before shifting. Pot Cape and other bulbs as soon as the foliage is etting strong; use chiefly loam, leaf mould and fine sand. The Cinerarias, herbaceous Calceolarias, Pelargoniums, Fuchsias, &c., o be shifted forward as soon as they fill their pots with roots. roceed as diligently as possible with the repotting of such of he hard-wooded plants as require it, so as to give them time to make a vigorous growth. Be careful, however, before potting to ave the ball in a moist state, and avoid giving large shifts to eak growers.

PITS AND FRAMES.

Maintain a kindly heat in the cutting-frame, top the cuttings hat have taken root and are beginning to grow; but if more e wanted they may be allowed to grow until they are of suffi-nt length to furnish a fresh batch of cuttings. Continue to t in cuttings as previously directed. The Calceolarias for dding-out purposes, if well established, may soon be planted out in a turf-pit in some good sandy soil, where they can be protected from frosts and cold cutting winds. Let the air in favourable weather circulate freely among the Auriculas, Carnations, &c., in frames. W. Keane.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Turned over ground roughly to get the benefit of the frosty nights. Put more Sea-kale and Rhubarb into Mushroom-house. Will bring the next forward out of doors by covering with pots and boxes, or hand-lights. Earthed-down the last made-up Mushroom-bed, using, as we generally do, stiffish fresh loam for the purpose, digging down to the understratum of the kitchen garden, if other material cannot be got, placing it on from 1½ inch to 2 inches thick, kneading and beating it firmly, making it as smooth as possible, and then watering all over; after which, by beating with a clean spade, and drawing it along at the same time, a fine smooth surface is left. We have frequently used turves reversed for the purpose, and some finer soil to fill up all cracks and cover the surface: this plan always answered well if the mere grass was first pared off and set aside for other purposes, and care was taken to know that no spawn of other fungi was in the turf. Before spawning we like the bed to be about 85°; and, if after a few days it does not get any warmer, we earth-up as above. We frequently make bits of beds, because, though I am not so particular about the materials as some writers in the Journal, I am generally so short of it that I can only make small pieces at a time; but these generally yield us an every-day supply. A heap is now preparing for another small bed, two parts of which may be horse-droppings, one part long dry litter cut to three-inch lengths, with a handbill over a block, and one part dry fibry sods: such a mixture makes a rare bed, and, well managed, may be expected to yield a white sheet of Mushrooms. Put in a light of Asparagus, which must be the last forced this season. And planted another frame of Potatoes, sowing Radishes, Lettuces, and Cauliflowers between the rows.

FRUIT GARDEN.

Looked to *Strawberries* as last week, noticed some fly appearing on them in the Peach-house, still in bloom. Was unwilling, therefore, to smoke with tobacco if possible. Applied the thumb and fingers, and with a small spring-hair brush, rather more wiry than a camel-hair brush, scattered a little powder of white hellebore over the trusses and where a fat gentleman had escaped the thumb on a leaf-stalk, and the remedy seems to have been pretty effectual. Noticed a twig or two of the *Peach trees* with several fly on them, and served them the same. An ounce would do ever so much thus tenderly used I have an objection to smoking much until the blossom begins to fall, some buds fell before opening from getting too dry last autumn. When we gather the fruit we are sometimes not so thoughtful of the trees as we should be, though it is always bad policy then to forget them. Others, however, we had to thin a good deal. When Noblesses, &c., come extra thick, it is always best to thin them pretty severely. There is then more certainty of setting well than if blossoms are left so thick; and it is just as easy thinning-out the bloom-buds when far enough advanced, to make sure that the flowers left have male and female organs, especially the latter, all perfect, as it is to thin out the fruit afterwards. Watered the soil, to keep up a healthy growth, but disapprove of anything like saturating when the trees are in such a condition. Examined trees in glass-covered case, and gave several water, being afraid they were rather too dry to sustain the swelling buds. Will give a little to more in a week or so, but will devise some means by which that watering will give warmth to the soil instead of taking it away by evaporation afterwards. No better weather could be for such cold fruit-houses, which have been kept with all the air possible on night and day, except in one tempestuous windy night, so as to keep the blossom as backward as possible, so as not to be injured with frost afterwards. With a glass covering the air-giving and air-regulating will pretty well determine the fruit-ripening time afterwards. Our Peach-buds in such a position have yet no signs of opening, though swelling. I do not envy some friends who say that theirs in similar circumstances are in full bloom. Despite of windmills and daubing the buds of dwarf Pear trees we have been obliged to use the gun among the tits and bullys, and we fear that in this or next year we must resort to netting. It is such annoyance to have nice trees well supplied with fruit-buds, and to find that as they swell the heart is nipped out of them. Pruned and nailed Apricots, the buds now swelling, though the wood has that hard appearance that says the trees have not quite recovered from the severe biting frost of last winter. As an evidence of the coldness and exposure of this place, I may mention that Apricot bloom is often open in the neighbourhood a fortnight before ours are pleased to do so.

PLANTS.

Amongst flowering plants watered with care, ringing the pots to see how they are for moisture before wielding the water-can. Find a little fly coming on the Cinerarias in the conservatory, will take them out and syringe well with lime, laurel, and soot water, clear, and then with clean water, and place in house to avoid smoking if possible. The pots were not set on moss this season, and hence, I presume, the fly. The Cineraria dearly likes a cool, moist bottom to stand on, and with plenty of air will scarcely ever then show a trace of the fly. Shifted large Fuchsias that had been pruned and put into heat as previously described, shaking most of the soil from the roots, and replacing with fibry loam and a portion of rotten leaf mould and old Mushroom dung. If the roots were dry they were soaked in a tub before potting. Most plants had then a little water given near the collar or stem, and the tops were syringed, and repeatedly in sunny days, to prevent the young short shoots flagging. Water at the root is sparingly given until the roots work into the fresh soil. Repotted Begonias, serving the old ones much in the same way, and giving more room to young ones. Potted Geraniums and other bedding plants to be afterwards turned into temporary beds. Propagated Dahlias, and made preparations for sowing Lobelia speciosa, and lots of other things next week, &c.—R. F.

TO CORRESPONDENTS.

⁂ We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Address (*R. H.*).—His address is Mr. Watts, Old Kent Road, S.E.

Richardia maculata alba (*A Subscriber*).—It cannot be an old plant yet, therefore it is not desirable to give it the least forcing this spring; but the "roots" are now on the move, therefore it would be a good plan to shake them out of the dry balls, and to put them into small pots. This kind does not seem so free in rooting and filling pots as the old æthiopica.

Hybrid Fern (*Idem*).—There is not such a thing as a hybrid Fern, as far as we know.

Spiræa venusta not Flowering (*D.*).—If your plant is that which is of the same section of the family as filipendula, or Queen of the Meadows, with tall spikes of purple flowers, it requires the same deep, light, rich, friable soil as the best new Phloxes, a good open situation, and not to be disturbed oftener than once in five or six years. It is a very good herbaceous plant; but there are several Spiræa venustas among popular names down in the country.

Wet Corner of a Peat-bed (*Idem*).—One corner of a peat-bed, in which Heaths and Azaleas are growing is "unavoidably" very wet. What will grow in the wet corner? Nothing better under the circumstances than the English and the American Cranberry (Oxycoccus palustris and O. macrocarpus). On the edges of the very wet part the two native varieties of Erica tetralix, rubra and alba, will grow better than in the dry parts. We have seen acres covered with this little Heath, along with Rushes, Carexes, Cotton Grass, Pinguiculas, Droseras, and some others where a sheep could not graze without being bogged—that is to say, without sinking in the bog. The double-flowering Caltha palustris would also grow there to perfection. Epilobiums and Lythrums would also do there; but being too high for the rest of this family bed, we would not attempt them.

Melons (*T. L. E.*).—Any of the popular Melons may be so grown, if the season has plenty of sun. See answer about Melons last week. In case the summer should be cloudy, plant so that you can curb the roots. For ridges, sow in April under protection, pot off and keep in four-inch pots until you see what the plants will do, then transfer to six-inch or seven-inch pots, and keep them out of doors well watered. Some plant out and carefully lift a fortnight or three weeks before showing, so as to be well established in the pots. Some even take in a few days beforehand, [illegible] judges soon tell that [illegible]

Eucomis punctata (*A Subscriber*).—It is an old-fashioned Cape bulb that is not worth its keep in a pot, and is generally found out against the front wall of greenhouses, where it will live and bloom with some covering, as with coal ashes or tan, from November to May. But you might [illegible] bloom it in a pot, and see how you like it. The same soil as for forcing Hyacinths will do for it, but it will grow in anything, and do with the same convenience as Tom Thumb Geraniums.

Seedling Cyclamens (*Idem*).—Your idea about seedlings of Cyclamen persicum is the most daft thing we ever heard of. They are coming into bloom in the pots they were sown in, and now you want to divide them into single pots, and place them in a Cucumber-frame at 65° of heat! If you were to do that they would not get over the damage for the next seven years. You must leave them exactly as they are till the middle of next September. In the meantime keep them as cool and airy as if they were Cape Heaths. Towards the latter part of May the leaves will be decaying, and in the first week in June turn the balls entire out of the pots, and plunge them in a west border or a north one, and let half an inch of the soil of the border be over the tops of the balls. There let them take their chance till September, and when you see the first move for growth up with them, shake the balls, and put the roots into separate small pots; then if you could give them one month of mild bottom heat of 60° to 70°, and not more than 40° to 50° of top heat, you would have the best set of persicums in the county.

Pronunciation of Names (*A Subscriber*).—There is no work giving the pronunciation of plants in the same mode that Walker's dictionary explains the pronunciation of common words.

Gas Lime (*W. W.*).—It is a very powerful application, and we cannot give any general rule for using it as a manure. Buy a pamphlet published at our office, entitled "On the Horticultural and Agricultural Uses of the Ammoniacal Liquor of the Gas Works," price 4*d.* It contains information about the use of the refuse lime.

Geraniums after Wintering in Cellars (*B.*).—The question about the right time to get out old Geraniums from cellars and other parts, depends entirely on what conveniences one has to grow them properly afterwards. The best plan would be this—to have them up from the middle of February till now, or second week of March; to cut off all their very small roots which are dead, or ought to be; to cut out any dead or damp parts; to pot them in as small pots as their roots could be put into without cramping; then to plunge them for three weeks in a mild bottom heat of from 70° to 75°, with a top heat of from 50° to 55°, and a little air on in the middle of mild days; after the roots begin to fill the pots, to remove them to a dry greenhouse for another month. But there is not one in a thousand who can do anything of the kind for want of room: therefore, the best way for them is entirely out of the question in most places, so that every one does them the next best way he can afford. And some cannot touch them before the middle of April, and then only to put them out of doors without pots in some warm corner, and cover them well from the frost, so that they will be done in many ways, and each way is, we shall say, the best for that place.

Clipping Box (*W. Woods*).—The best time for doing this is during showery weather in June.

Planting a Flower Garden (*A Constant Subscriber*).—We are sorry we cannot do as you wish. We only point out any errors and improvements in proposed planting submitted to us.

Planting Vines in Vinery (*A Seven-years Subscriber*).—At the warmest end plant the Muscats, then the Gros Colman, Frontignans, Sweetwaters, and Muscadines in the order we have named them.

Managing One Acre (*An Old Subscriber*).—Our "Poultry Book for the Many" will direct you as to fowl management. Pigs you may learn how to feed from the book you have. Cows and dairy operations are now being discussed by "The Doctor's Boy," and how to cultivate small plots is taught by our "Allotment Gardening for the Many." Any special questions we shall readily answer in these columns.

Cocoa-nut Fibre Refuse (*St. Mary Church, Torquay*).—You will see what Mr. Beaton says to-day. It can be had at Kingston-on-Thames, Bristol, and other places where the Cocoa-nut shells are crushed. See an advertisement to-day of a retailer of it. (*Fougère*).—It is not the right material, nor anything like it.

Garden Plan (*T. Lincoln*).—Your planting is good so far as is indicated on the plan. Any one of the methods indicated in our No. 47, p. 416, would suit your beautifully-curved borders, and, of course, the one you think the best will, therefore, be the best for you to adopt; but No. 2, in fig. 1, is entirely unfitted for such a scale as your garden is on; and No. 2, in fig. 6, will make you a better border.

Various (*H. B.*).—The fibre of the Cocoa-nut makes an excellent drainage material as we have long since mentioned. The fibre is totally different from the reddish dust, which is good for growing Ferns, &c. The end of September and the whole of October is the latest period to sow Spergula; but it is best from spring seedlings from a sowing any day in April. The beginning of October is the best time to get in Conifer trees in pots from the nurseries, and April is the worst time, as the first-come-first-served principle has run them down to the worst and weakest plants. Always recollect, October *is best for all pot plants from the nursery*, and do not forget that November is best to obtain Roses. Whichever Cypress is the cheapest, is most certainly the best for putting into flower-beds in winter. A sixpenny Cypress looks then just as well as one at 31*s.* We do not exactly know which are the cheapest kinds; but the varieties of sempervirens ought to be the cheapest. Goveniana, Lambertiana, and macrocarpa are very nice kinds and very reasonable in price.

Ribbon-border (*Inquirer*).—The Musk Mimulus will not do at all as you intend it; but as it is desired to have the Musk scent we would plant the Musk in the first row, alternating with the Variegated Alyssum, and allow the two full 10 inches in spread, and clip down the Musk if it gets in [illegible]. Then you should put Perilla where you intended the Musk, and the Purple Orach at the back next the wall. The best thing to do with the seeds of all the kinds of water and land Melons which come from parts between [illegible] and Pekin, is to give them to the fowls, for there is not one out of all of them that is worth the value of a straw in this country. We had scores of them through our hands in a Melon house of the very best kind. Even [illegible] Spanish and American water Melons are not one-half so good as a slice of raw Turnip in our climate. [illegible] Indian Raphanus caudatus is a [illegible] Radish not worth sowing.

Various (*An Old Constant Reader*).—If your burnt earth is free from ashes, and it is in little hard lumps something resembling broken pieces of pots, it will be good for lightening the soil in pots, and act much as rough sand or pebbles would do. If mixed with the dust or very dusty, you had better use it on the ground out of doors. The plant called the Bear's-foot is the Helleborus fœtidus, but that cannot be what you mean. The Hare's-foot Fern is the Davallia canariensis, but we are not sure if that is the Fern you have. We cannot tell what is the matter with your Acacia, it should flower by-and-by on the growth of last season, if the wood was at all well ripened in the autumn. Give it plenty of water now, and manure water as soon as it shows the flower-buds. The compost will do for Begonias admirably if the manure is old and sweet.

Sweet-scented Annuals (*Lex*).—We confess we have not given the subject sufficient attention, and the time you have given is so short, and then, perfume is so deceiving, that what some people like others dislike, We mention the following as occurring to our mind, as the first step to annuals with perfume. Those to be sown in heat or greenhouse:—Datura Wrightii, D. metalloides, D. clorantha; Dianthus Heddewiggii, &c.; Mimulus moschatus; Martynia fragrans; Nicotiana vincæflora; Petunias; Salpiglossis; Schizanthus; Verbenas of varieties; and some would say Balsams of colours. Out of doors:—Sweet Alyssum; Candytufts of colours; Catchflys of colours; Clarkias ditto; Indian Pinks; Erysimum Peroffskianum; Mignonette; Peas, Sweet, of colours; Nasturtiums of kinds; Phlox Drummondi, varieties; Stocks, Ten-week, &c.; Virginia Stock; Wallflowers.

Plant on the Ruins of London (*Rector*).—The plant which came up so abundantly among the ruins of that part of London destroyed by the great fire of 1666 was *Sisymbrium Irio*, or Broad-leaved Hedge Mustard. It was in such quantities that Morison, who was a contemporary, says it could have been mowed. One of its popular names, London Rocket, alludes to the circumstance.

Slugs in Strawberry-bed (*Idem*).—Two or three soakings with lime water will give them a quietus.

Cocoa-nut Fibre Refuse (*An Old Constant Reader*).—The refuse from the mat and brush-makers is of no use for Ferns, &c.; or, rather, it would destroy them if used as a substitute for soil. We have so many applications on the subject that we must make arrangements for the easy supply of the demand. See advertisement.

Scorpion Thrift (*J. L.*).—We do not know a plant so named. If you send us a specimen of the flowers and leaves we may identify it.

Heating Span-roofed Greenhouse (*An Amateur, Peckham*).—Of three-inch piping for hot water you ought to have a flow and return pipe on each side.

Shading Fernery in Greenhouse (*T. Best*).—The best temporary shade you can adopt is by painting the inside of the glass with a creamy mixture of whitening and size. If a little Prussian blue is ground in with it the colour is agreeably toned.

Pampas Grass (*A. F.*).—It is quite hardy. Only remove the dead leaves, do not cut it down. Bee-glasses may be obtained of any of the dealers in glass who advertise in our Journal.

Names of Plants (*P. M., Ireland*).—It is only Gymnogramma sulphurea, perhaps a dwarfer variety than usual, if its present size is not the mere result of the treatment it has received. (*W. Woods*).—1, Pernettya mucronata; 2, Garrya elliptica; 3, some Amaryllidaceous plant, utterly indeterminable by a leaf. (*W. X. W.*).—It is Saxifraga ciliata. It is a native of Mussooree and other parts of the low ranges of hills in Northern Hindostan. (*A. M., Guernsey*).—Narcissus odorus.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

May 14th and 15th. **Taunton and Somerset.** *Sec.*, Charles Ballance, Esq., Taunton.

May 27th, 28th and 29th. **Bath and West of England** (City of Wells). *Steward*, S. Pitman, Esq., Manor House, Taunton. Entries close May 1.

June 4th and 5th. **Beverley and East Riding.** *Sec.*, Mr. Harry Adams.

EGG-HARVEST DEFICIENT.

Whether from atmospheric or other causes we cannot tell, but we have many complaints that fowls have not laid well, and that sitters have been scarce. As it is very essential to have early chickens, whether they are intended for table or for exhibition, our readers, like ourselves, will be anxious to get forward. Just as extravagance is mostly justified on the score of economy, so we are never so impressed with the necessity of being beforehand as when the fact of being all behind has rendered it impossible. We have had two chickens instead of forty, and as it is proverbial, "busy as a hen with one chick," so we gave all our energies and attentions to two promising individuals, both of the masculine gender, one a Cochin, one Spaniard. The reflection if we had but pullets to match incited us to exertion. We like March chickens, they are generally hardy, and are, if defective, good eaters and saleable at market. We have, therefore, tried with our hens' eggs that which we have practised for many years with our Pheasants'. It would perhaps be more correct if we said we had partially adopted it, and thanks to the thought, we have several hens surrounded by broods of from twelve to fifteen chickens. We put two or more hens on eggs on the same day. When within four days of hatching, we try all the eggs in warm, not hot water; a bowl with 3 inches of water is enough. The eggs are taken from under the hen, and put in the water; after floating for a few minutes, one and then another will begin to "waggle" or "wobble" in the water, some of them almost violently, and all that will hatch will make a sign of some sort sufficient to indicate vitality. It is seldom at this time of year all the eggs that make up a sitting are good, and, therefore, out of the thirty-three or thirty-nine eggs that have been under three hens, those that give evidence—say twenty-two or twenty-six—are put under two of the three. They bring them all out, and take to them. The third hen, like Corny Delany's mother, who was persuaded it was Lent during five years, because they could afford to buy nothing but herrings, is persuaded she has still three weeks to sit, and is supplied with fresh eggs. She lends herself easily to the deception. As these large broods require much warmth during the night, we not only cover them closely, but we put them in an outhouse every night.

PRESERVING EGGS.

Eggs preserved according to the following directions are good for puddings, omelets, cakes, or poached eggs even, at the end of the year.

To one peck of fresh lime put three pails of boiling water; stir it well up; let it stand twenty-four hours. If an egg when put in sinks to the bottom it is ready; if the egg floats, the lime is too strong.

Six score eggs put in an earthen pot holding a pail and a half of water and half a peck of lime will supply a family of four to five persons well for the year in puddings, &c. I have ever found the eggs perfectly sweet. I put them up in February, March, and April, as I find I can spare the eggs.

My poultry are Duckwing Game, and Pheasant fowl. The Game eggs are very rich, and afford excellent birds for table; so do the Pheasant fowl.

I feed my February-hatched chickens upon boiled rice, barley-meal, and meat chopped fine. The rest of my poultry have barley (morning feed), scraps from the kitchen, and the rest they find in two paddocks. I never have my birds ill, they never being overfed, and having plenty of room to go about.

I rear pullets early, to lay in winter, and the older ones for summer, so I have eggs nearly every week in the year.—**Isabelle de Roubigné.**

HALIFAX POULTRY SHOW.

The first annual Exhibition of this Society took place in the Riding School, Halifax, on the 1st instant.

Originally, we believe, the Show was only intended to be for single Game cocks and pairs of Game hens. However, a wish having been expressed that it should be extended, two classes for Hamburghs were included, as well as sweepstakes for Game cockerels, and single cocks in Dorkings, Cochins, Spanish, "any other variety," and Game Bantams.

Encouraged in the attempt to establish an exhibition at this time of the year, the one we note having proved successful financially as otherwise, doubtless a much enlarged schedule, embracing the principal varieties of fowls, will be adopted next year.

The sweepstakes classes were very poorly filled, although many of the birds were of considerable merit. The pens belonging to Mr. Turner, of Sheffield, were used.

Too much praise cannot be given to the President, Vice-Presidents, Committee, and the Hon. Secretary (Mr. J. W. Thompson), for their admirable arrangements, and the careful and able manner in which they were carried out. The Riding School is very spacious and lofty, with a temperature during the day rather colder than suitable at this season. We doubt not, however, the Committee will remedy this slight defect on a future occasion. We merely mention this, not by way of complaint, but as an improvement necessary to the comfort of the birds.

The Single Game Cocks were divided into three classes—namely, Black Reds, Brown Reds, and "any other variety;" the two former containing many perfect birds, while the latter were only indifferent.

Black Reds numbered twenty-four, Mr. Fletcher gaining first prize with an excellent bird, closely pressed by Mr. Dodds for that honour; the third prize being awarded to a well-known old cock shown by Mr. G. Hellewell. The highly commended cocks of Mr. C. W. Kellack and Messrs. Julian and Boys were also very much admired.

Brown Reds numbered fifteen; Mr. Fletcher winning the first and third prizes, the former with a magnificent bird, which also won the silver cup for the best cock in the Exhibition.

In "any other variety," Duckwings took first and second, the third prize falling to a White.

Game Hens formed a very fair class, numbering twenty-two pens. J. Firth, Esq., the President of the Society, was successful in securing first and second positions with good Brown Reds and Duckwings respectively.

Both varieties of Spangled *Hamburghs* competed together. A good pen of Gold were first, also winning Mr. W. Leeming's special prize; Silver second, and Gold third. Pencilled Hamburghs were likewise classed together, the Gold variety taking precedence.

The sweepstakes for *Game Cockerels* contained thirteen entries. The first prize was awarded to a good Brown Red belonging to Mr. E. Aykroyd, which, however, changed owners, having been claimed.

The *Sweepstakes* class for Dorkings does not require particular mention. In the similar classes for Cochins and Spanish Mr. Stretch and Mr. E. Brown each sent a good representative.

The *Game Bantam Cocks*, although a small entry, were of especial merit, the first-prize bird, a Black Red, belonging to Mr. John Crosland, jun., being a gem, and in miniature a perfect Game fowl.

We published the prize list last week.

BIRMINGHAM PERIODICAL POULTRY AND PIGEON SALES.—The Sale on Tuesday last was attended by fanciers from all parts of the country, attracted, no doubt, by the disposal of Mr. H. Tomlinson's surplus stock of Buff Cochins. These birds, twenty-five in number, made from 30*s.* to £5 each. There were some very fair pens of Spanish fowls, and some good Aylesbury Ducks, which realised remunerative prices. The Pigeons were not in such force as usual, but comprised some good Dun Carriers and Fantails. No pair, however, made over £5. Mr. J. B. Lythall, the Secretary of the Birmingham Cattle and Poultry Show, officiated as Auctioneer.

CAN POULTRY BE KEPT TO PROFIT?—"Fifteen Silver-pencilled Hamburghs laid, from the 1st of January to the 31st December, 2764 eggs—about 180 per fowl—the market value, £7 12*s.* 3*d.*, and the cost a fraction over 3*d.* per pair per week, or £5 10*s.* the lot per year. These were kept under many disadvantages—a small yard, with only now and then a run into an orchard and field; and everything, except green vegetables, to buy at the dearest rate. I do not think that, under any circumstances, fowls can be kept in good condition for less than this; and no one kind of food can ever be called the best, for change of diet is their very life, the very thing they need, either as laying hens or chickens growing up for the table. Their food should be of good quality, and they should be well supplied with clean water. The Silver-pencilled Hamburghs are small, plump birds; when three months old equal to a good Partridge. The flesh is white and delicate as that of a Dorking. There can be no doubt they might be reared at small cost."—(*A. M. Matthews, in Mark Lane Express.*)

AUSTRALIAN [illegible] [illegible] BREEDING IN ENGLAND

[illegible] [illegible]alian Grass Parroquet breeds [illegible] [illegible] [illegible]ment in this country. The cage should be square, of a middling size—2 feet 6 inches by 2 feet by 15 inches, with wire front only. Place at one end a rough box about 18 inches high and 7 inches square, covered with dry moss to represent an old stump, and having a hole large enough to allow the birds to have easy access. Place a tray or half a cocoa-nut shell inside, containing the nest ready shaped, composed of [illegible] [illegible] moss and wool, similar [illegible] what Canaries build with [illegible] [illegible] [illegible] the cage. Place [illegible] [illegible] [illegible]red situat[illegible] [illegible] [illegible] birds on canary [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] millet and [illegible] seed, and when long grass is in seed let them have a bunch of it hung up. The price is about 25*s.* per pair.

I do not know of any instance of Love Birds breeding in confinement.—W. G.

APIARIAN NOTES.—No. XVI.

MY APIARY IN 1861.

(*Continued from page* 428.)

No. 7.—I have stated in No. XIV. of these notes (page 347), that this hive perished from an attack of wasps, after the loss of all the queens on the issue of the second swarm. A few days ago I paid a visit to an apiary of mine at some distance from my residence; it is under the care of my man, and most useful assistant in all appertaining to apiarian matters, which will partly account for my not having been there for some months. There was one stock working most beautifully, carrying in great quantities of pollen which fairly puzzled me. What hive could that be? The adjuster No. 7; but that I thought was dead. Then my adjutant came to the rescue of my bewildered thoughts. Yes, certainly, he had obtained leave from a cottager to drive a lot of bees doomed to the brimstone-pit; these he had brought home and had transferred to this box of empty combs. I now also remembered that, having previously broken up No. 1, (the united half-straw and octagon-box described in page 346) the bees of which went to strengthen an artificial swarm, the upper straw half, containing more than 20 lbs. of sealed honey, had been made use of for the purpose of supplying No. 7 with sufficient food for the winter. I was rather curious to see where the inmates might be collected, and accordingly turned up the super. I am bound to confess that the greater portion of these were in the super, and it appeared very evident that breeding had commenced there. We should expect this would be the natural result when there is no honey at all in the lower compartment. The bees are already clustering down through the central communication, and I do not think it will be very long before the breeding will be almost entirely carried on in the lower box. But I must admit, in accordance with the views of your northern correspondents, that during some part of this winter the lower hive might, in all probability, have been removed quite destitute of bees.

No. 8.—A Langstroth frame-hive, is tenanted by an artificial swarm. On the 9th of August I removed a frame from my Ligurian-hive, containing brood in all stages after brushing off the bees. This with three others was arranged in a four-frame nucleus-box; and having removed No. 11 (a strong colony) from its stand, the nucleus, being substituted for it, received the bees which returned from foraging. On the 14th a royal cell was in progress, and another brood-comb was given. The small box was then sent out to my friend, Mr. Woodbury's apiary, in order that the young queen might be properly impregnated by a true Ligurian drone. His pugnacious bees made such a vigorous onslaught on the intruder that he was obliged to request their removal, and they returned with wofully diminished number.

Being absent from home on a fishing excursion, the box was left undisturbed until the 27th, when I found not only a sadly reduced population, but very little honey—thanks to the robbers. There was a particularly poor-looking royal cell, from which I supposed nothing very good could be likely to issue; however, on the 31st I was gratified with the sight of a very fine queen. I now sent the hive out to the garden of a relative in the vicinity of Mr. Woodbury's drones, and on September 13th the queen had commenced laying. As there was a great deficiency in bees on the 14th, I drove No. 1, captured the black queen, and united the bees to No. 8. I had previously secured the Ligurian mother, which was confined in a small perforated zinc box inserted among the combs. On the 15th the frames and bees were transferred from the nucleus into a full-sized hive; some combs, obtained from No. 1, having been temporarily suspended in the frames, were added to the four already in the possession of the bees. The queen was liberated on the 16th, [illegible] have [illegible] [illegible] [illegible] immediately killed. It is probable [illegible] she was re[illegible] [illegible] [illegible] [illegible]ong, and was weakened by her confinement.

On the 20th [illegible] [illegible] [illegible] [illegible] the brood of the [illegible] Ligurian queen [illegible] in progress, and on the following day the hive was again sent out to the garden adjoining Mr. Woodbury's [illegible] [illegible] [illegible] [illegible] the beginning of

October, but I had no hope or expectation of her becoming a fertile mother, as there were very few drones left in my friends' hives; the few there were had been chiefly bred in worker-cells by drone-breeding queens, and the weather was rather unfavourable for the flight of drones. The hive was allowed to remain for some weeks, when it was brought back to its stand in my town garden. The bees that were the progeny of the monarch which had such a very limited existence, were very good and fine Ligurians—so I trusted that the queen, if fertilised, would turn out all right and true; but no sign of breeding greeted my inquiring eyes at any time during the remainder of the year. On the 1st of February, I carefully searched every comb and could find no trace of a queen of any sort; so concluded that having remained unimpregnated the bees had destroyed her, or that in some way she had become lost. Possessing a tolerably large number of inhabitants, I resolved to unite them to a neighbouring hive, and, on the 20th, actually removed half the frames, brushing off the bees for the purpose of compelling them to occupy as small a number of combs as possible. Fortunately I could not decide at once which of my hives most needed an addition to its population, so the union was delayed for two days; when, on again inspecting the frames, I was gladdened by the sight of sealed and unsealed brood and a quantity of eggs. On another comb I discovered a somewhat diminutive queen. My resolve was quickly taken; so, instead of uniting these bees to others, I removed five frames with all the bees of the next box, No. 10, which, as I have previously stated, had become minus a queen, and added them to those of No. 8. A small amount of fighting ensued, but there is every reason to hope that the union will be the means of establishing one of the strongest colonies in the apiary. The foregoing case is chiefly noteworthy, owing to the very late period of the season when the queen was raised. It also proves the dangers to the queen which attend the joining of bees; the energy with which they set about repairing their loss; and the careful search which is necessary before deciding that no queen exists in the hive.

No. 11.—Early in the season this was a common straw-hive, marked down in the list as in good condition. Having completed two Langstroth-boxes, I was anxious to see them tenanted. As my apiary contained several straw hives, I resolved to transfer both combs and bees of some of them into these new boxes.

On May 4th I commenced with No. 11, from which all the bees were in a few minutes effectually driven out. The combs were cut out with considerable difficulty, owing to the presence of two horrid sticks thrust across the hive by its original proprietor. By means of a little paring, and by the aid of small sticks and wire, the combs were fastened in the frames. The box was put on the old stand, the bees were knocked down by a vigorous stroke on the upper surface of the bars, and in a few minutes had disappeared among the combs. During the succeeding week, at intervals of one or two days, the frames were taken out, the artificial supports to the combs removed when practicable, and the combs themselves pared where too thick, or where the bees had united them together; so by degrees the frames were brought to occupy their proper positions. A comb full of brood was taken away at the time of the transference; again on the 24th; and lastly, on August 14th. Also to strengthen another stock (No. 6. See page 347) a transposition between it and No. 11 was effected on May 18th, greatly to the gain of the former. It was once more removed from its stand for the purpose of obtaining bees to form the nucleus of No. 8, as already described: nevertheless, in spite of all these deprivations, I obtained in supers 24 lbs. of beautiful honey; and it remained at the end of autumn, and is at this present time a fine populous stock.

No. 12 was also a common straw hive. My friend Mr. Woodbury having presented me with a supernumerary unimpregnated Ligurian queen, I was anxious to put her at the head of a stock. Confined in a small perforated zinc box, I placed her under a tumbler over the central hole in the top of a hive until I could succeed in preparing a proper habitation for her. Thus she remained one night, and in the morning was in a sad state from the condensed moisture and vitiated air. Although a pouring wet day, I drove No. 12, and with very little trouble succeeded in dislodging all the bees. The swarm was put into a frame-hive, No. 14, which occupied the old stand. The straw stock, No. 12, which contained a large quantity of brood was removed to another apiary. The queen-box with the imprisoned Ligurian was secured among the combs. Owing to the state of the weather no bees were out, but it was necessary to obtain a sufficient number to bring the brood and eggs to maturity. A hive was taken away and No. 12 substituted for it. The first was turned up, a great many bees took flight to resent the insult. A few taps and enough soon found their way into No. 12.

The following day the queen was liberated, but was lost either at this time or soon after. From the immense quantity of brood the bees soon became very numerous, so that on the 19th of June it was in a condition to part with sufficient bees to people No. 13, by transposition, after that hive was driven to form another artificial swarm. I do not think there could have been any queen at this time as so many of the bees left it, that it was necessary the following day or so to rechange the two hives. I was not at this time aware of there being anything amiss, but having waited in vain for any signs of young bees with the Ligurian type, it was at length very evident that the Ligurian queen at any rate had never become naturalised at the head of the colony. A common queen from a cottager's doomed hive was at length added, and was at the head of affairs on the 13th of August, when Mr. Woodbury in the course of one of his driving operations, at a place fully two miles off in a straight line, discovered that the young queen in one of the stocks must in one of her rambles have met with one of his Ligurian drones, many of the young bees bearing unmistakeable evidence of Ligurian blood. Anxious to see what this queen might turn out in the future, he requested me to put her at the head of one of my colonies. Fixing on No. 12 for this purpose, I determined on establishing another Langstroth-hive. The bees were expelled, the queen secured and destroyed, the combs cut out, and four of the best secured in frames. No brood was visible, therefore two brood-combs were taken from No. 6, the little box with the queen tied to one of the frames and all left for that day. On the following, the slide was drawn and the prisoner liberated, in this case to be joyfully received by her new subjects. On the 27th, I discovered her to be quite safe, and she had laid a great number of eggs. I had the pleasure of again seeing her yesterday (February 22nd), she is a very fine queen, and has deposited a considerable quantity of young brood. Some of the bees hatched last autumn have the Ligurian marks very decided, though not nearly of so good a colour as the true breed, or of the progeny of a true Ligurian mother impregnated by a black drone. All that I have had an opportunity of seeing of these latter are, in appearance, quite equal to those brought forth by queens true in every particular.—S. Bevan Fox, *Exeter.*

(*To be continued.*)

BEES DYING FROM DYSENTERY.

Just eleven months ago I penned the following passage which then appeared in your pages. "I never in my life had dysentery in a hive, and know nothing practically regarding it." I now regret to say that this blissful state of ignorance exists for me no longer. My acquaintance with this formidable enemy commenced this winter; three of my hives having been attacked. In spite of a prompt exchange of floor-boards, and afterwards of boxes, the first queen succumbed on the 17th of January, when those of her subjects which survived were united to one of the other infected stocks. Ten days later the queen of this colony likewise met the same fate; when the whole of the remaining bees were united to the third diseased stock. Upon this, the sole surviving remnant of what were originally three good stocks, I tried every remedy which my acquaintance with bee-books, or the experience of apiarian friends could suggest. The floor-board was changed morning and evening, and the hive itself more than once; syrup flavoured with rum administered, and salt strewn on the floor-board; but all to no purpose—the rate of mortality remained unchecked, and it appeared merely a question of a few days as to when the queen herself might share the fate of the majority of her subjects. Under these circumstances I resolved to abandon the colony to its fate, and remove the queen with nearly all the brood-combs to a healthy stock whose sovereign (a drone-breeder) had previously disappeared. This resolution was carried into effect on the 3rd of February, when the surviving queen was introduced to, and cordially welcomed by, her new subjects. Notwithstanding this deprivation the colony still survives, and the mortality has greatly diminished; although it is difficult to say whether the decrease in the number of deaths is to be attributed to the virulence of the disease having abated, or to the few victims which it finds among the present scanty population. On changing the floor-board, on the morning of Sunday the 16th ult., I found the detached covers of two queen cells, one of which was so attenuated, that there appeared little doubt that the royal occupant which it had protected had arrived at maturity; whilst the other, retaining its full density, afforded presumptive evidence that its unfortunate tenant had met with an untimely end. A careful inspection of the interior of the hive, which I made next day, proved these inferences to have been perfectly correct. A virgin queen was discovered perambulating the combs; whilst one naturally-opened cell, and the mangled remains of three others, showed that she had lost no time in gratifying the remarkable instinct which impels a queen bee to the remorseless slaughter of her younger sisters.

Next followed an examination of the hive to which the queen and most of the brood of this unfortunate colony had been transferred. A number of young bees were found to have issued from their cradles; whilst the queen* had not only supplied their places with eggs, but had extended her ovipositing to the adjoining combs. This leads me to remark, that all the queens of these infected stocks manifested the most remarkable fecundity almost up to the very hour of their decease. It would appear as if, whilst the colony itself was threatened with extinction by the ravages of this fell disease, nature impelled the royal mother to the utmost efforts to recruit the fast-diminishing population.

A distant correspondent, who had written to me for advice in a similar emergency, says, "I think I shall save one of my infected stocks. The other is hopelessly gone—not a bee left, but about half a dozen pounds of honey. The queen, I conclude, had fallen a prey to disease and died. The other I took up, and on examination discovered not to be so bad; and since I gave them a good dose of Mr. Bevan Fox's cordial,† they have recovered from their supineness, and now take the food from the bottle at the top, resenting every insult, so that I begin to think they are pot valiant! I hope to be able to bring my three stocks through, since it is very disheartening to see a fine colony or two swept from before your eyes without being able to rescue them."

I shall be heartily glad to learn that my correspondent's hope has been realised, and that his experience of the effects of dysentery has been less fatal than that which has so recently fallen to the lot of—A Devonshire Bee-keeper.

RAISING AN ARTIFICIAL LIGURIAN QUEEN.

In reply to "A Yorkshire Bee-keeper," he will probably see in a chapter of "Apiarian Notes," already in the hands of the Editor, a description of the mode in which my No. 8 hive was established. The plan adopted was much the same as he suggests, and a sufficient number of bees were obtained. Whether the Ligurian workers are retained on the brood-comb or not, is, I think, a matter of little importance. In the instance referred to, they were brushed off prior to removal, and none but black bees—returned from foraging—with the brood-comb and two empty combs, constituted the nucleus from which sprung the future stock. After the lapse of two or three days the combs were inspected near dusk, the presence of a royal cell ascertained, and every black drone caught and killed on the spot. The hive was at once closed-up and transported to an apiary which contained none but Ligurian drones. In this way the young queen was properly impregnated, and would most probably have been the best Ligurian queen in my apiary had not the unlucky accident occurred to her as related. The queen raised from her brood is living and breeding, but it remains to be seen what her produce will turn out.

If "A Yorkshire Bee-keeper" wishes to maintain an unmixed apiary of Ligurians, let him send away all black bees from their vicinity. He can then remove a brood-comb, best, probably, with the bees adhering; shift a strong common stock, putting the nucleus in its stead. Feed the nucleus with boiled white sugar and water. At the end of three days inspect, destroying all black drones. If one or more royal cells are in progress, confine the bees, and remove to the apiary of Ligurians. As soon as he has ascertained that the queen has commenced breeding he can strengthen the hive by giving brood-comb from his hives of the common bee, which he will find much safer than to attempt any subsequent joining of adults.—S. Bevan Fox, *Exeter*

BEES IN COURT.

Devon Intermediate Sessions.—Before Sir John B. Duckworth, Bart.

Charles Hill, a carpenter, was indicted for stealing on the 3rd of February, a hive of bees, half a pound of honey, and a stand, the property of George Ellis, yeoman.

Mr. Holdsworth prosecuted, and Mr. Carter defended.

Prosecutor stated that he saw the hive quite safe on the 2nd of February, and missed it the following morning. On the 10th of the same month he saw it in the shop of Mr. Edward Whitmarsh, ironmonger, of Newton Abbot, and recognised it as his property.

Mr. Whitmarsh stated in Court that he wanted some honey, and for that reason purchased the hive, giving *7s. 6d.* for it.

Mr. Carter asked the prosecutor how he became possessed of the bees; and, if he bought them, did he remember the saying that bees never thrived if they were bought or sold? Prosecutor replied that he found them.

Q. Did you find the owner? *A.* No.

Q. Did you try? *A.* Well, any one might have had them if they could redeem them.

Q. Well, I suppose they were not ear-marked. (Laughter.)

Cross-examination by Mr. Holdsworth elicited that prosecutor did not find the butt, but only the bees—the former he purchased.

Mr. Carter: Then did you put the bees into it? *A.* Well, I shook them into it. (Laughter.)

Here the prosecutor was about to remove a part of the stand from the butt, when several of the bees escaped from "durance vile;" and, much to the horror of those present, flew about the court with great activity. The Hon. Chairman, after a short time, succeeded in obtaining silence, and the case was proceeded with.

Mr. Carter thought it preposterous to attempt to identify bees, and assured the bench that the butt was no agreeable sight in Court, seeing that so many of its inmates had escaped.

Verdict, "Guilty." A previous conviction having been proved against the prisoner, he was sentenced to twelve months' imprisonment with hard labour.—S. B. F., *Exeter.*—(*Western Times.*)

OUR LETTER BOX.

Fleas in Poultry (*Constant Subscriber*).—The hen, in all probability, has no access to dust, which is the cure for all vermin. It is most essential that, during the short time a hen is off her eggs, she should have every comfort and convenience. Food and water are essentials—the dust bath is necessary. No hen will sit closely and well if she has vermin. Let a heap of dust be placed close to her food and water, and if she is much troubled, mix to a bushel of dust half a pound of black sulphur.

Deformed Fowls (*Regular Subscriber*).—The only method we know of correcting a crooked tail, is by fastening the rump so that it must remain straight. This can be done by strapping, or by a piece of silver wire passed through it and fastened. It is rendered much easier if the tail-feathers are pulled out before the operation.

Sickle-feathers of Buff Cochin-China Cock (*S. H.*).—The white edges of the sickle-feathers are no disqualification. The tail of a Buff Cochin cock may be black, or nearly so; or black edged with white, or mixed with white. The shape of the tail is more important than its colour. If we were asked to state the most desirable shade, we should say a rich red bronze, like the side of a Golden-pencilled Hamburgh cock's tail. In all varieties the tail becomes white as the bird gets older.

Poultry-keeping (*Z. A., Dartmouth*).—Your house will be quite large enough for six hens and one cock. Let the floor be the earth levelled and covered 2 inches or 3 inches deep with sand, so that the dung, &c., of the fowls may be readily raked off. The nests are best on the ground, and may be either made of wood or wicker-work. The perches are best made of larch or fir-poles about 3 inches diameter, sawn down the middle, and fixed with the round side upwards. A small glazed window is always desirable. A coloured Dorking cock, and six Buff or Partridge-coloured Cochin-China pullets, would suit you best, as you require them for use and not for exhibition. In our "Poultry-Book for the Many," which you can have free by post from our office for seven penny postage stamps, you will find full directions for making nests, feeding, &c.

Pigeons (*Pigeon*).—The true Blue Rock is too wild and intractable, and, therefore, rarely found in dovecotes. Try the Runts, they are the larger variety and not bad breeders.

Yield of Butter (*Overdessel*).—Mr. R. White upon the Oakley Park farm found that in summer, when the pastures were in best condition, that the average yield from eight Alderney cows was 1 lb. 8½ ozs. of butter from three pints of cream; and from eight Kerry cows 1 lb. 4½ ozs. from the same quantity of cream [illegible]

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[*] Her majesty had evidently a very lively recollection of the fright she had previously sustained in being caught and transferred to a strange hive. I could not find her on any of the combs; and at length, when all had been removed, I discovered her almost alone, trying to hide herself in a corner of the box.

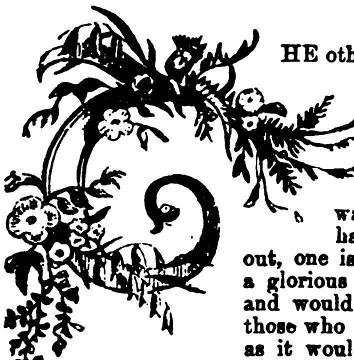
[†] Syrup flavoured with rum is dignified by my correspondent with the title, in consequence of Mr. Fox [illegible] suggested it to me as a remedy for dysentery.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	MARCH 18—24, 1862.	Weather near London in 1861. Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
18	Tu	Princess Louisa born, 1848.	29.906—29.249	49—35	W.	·04	10 af 6	7 af 6	52 9	18	8 14	77
19	W	Cuphea eximia.	29.307—28 936	51—32	W.	.06	8 6	9 6	16 11	19	7 56	78
20	Th	Cytisus racemosus.	29 576—29.346	48—33	S.W.	·20	5 6	10 6	morn.	20	7 38	79
21	F	Sun's declin. 0° 15′ N.	29.796—29.387	47—30	W.	·01	3 6	12 6	33 0	21	7 20	80
22	S	Cytisus filipes.	29.723—29.595	55—32	N.W.	—	1 6	14 6	38 1	☾	7 2	81
23	Sun	3 Sunday in Lent.	29.837—29.774	61—28	S.W.	—	v	15 6	30 2	23	6 43	82
24	M	Salvia dentata.	29.808—29.689	64—38	W.	·13	56 5	17 6	10 3	24	6 25	83

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 50.9° and 33.7° respectively. The greatest heat, 67°, occurred on the 19th and 20th in 1836; and the lowest cold, 17°, on the 20th in 1845. During the period 153 days were fine, and on 92 rain fell.

CROCUSES.



THE other day I had a most capital text from a reverend gentleman, whose interesting letter will be found in another column of this Number. It was in these words: "I have two beauties now out, one is *Crocus lagenæflorus*, a glorious deep orange yellow, and would be most valuable to those who grow shaded ribbons, as it would shade off with the common yellow and Cloth of Gold, and they are all three out together"—that is to say, on the 1st of March in the west of England. Although we have done more for the Crocus in these pages than most of our day and calling, that text tickled the ruling passion to such a pitch that I could not get it out of my head without an attempt at discoursing on it in all its bearings.

In the first place, the word Crocus has not found a place in any living language except our own since the Latin ceased to be such. It was given by Theophrastus, and the next we hear of it is as the name of a love-sick swain from the same race as Garibaldi. The lady love was a beauty supreme, and her name was Smilax, but she was more daft than the lady who refused the laird of Cockpen, and the Italian Crocus was less fortunate than the Scotch one. He died broken-hearted. The notion at that time—the time of Augustus, second Emperor of Rome—was, that when the body died the soul went into something else, and it was said that the soul of Crocus went into a pretty flower which carpeted the Campagna of Rome; and that flower holds the name to this day.

What an absurd story, most would say; but when I assert it is taught in the best modern schools of Europe and in those of the Federate and Confederate States, and that no man can get into holy orders in the Church of England, or in the Church of Rome, or yet in the Kirk of Scotland, unless he can repeat that story better than I can; and, moreover, that there is nought against it in the "revised code," there surely must be something in it, if not the spirit of Crocus, and my attempt will be to find out that something, and tell you all about it,

The story about Crocus did not attract the attention of botanists earlier than the time of Linnæus in 1737, and he only knew two kinds of them—vernus and sativus, the spring and autumn Crocuses, which he included as two varieties of one species. In 1797 Wildenow formed these two into two distinct species, and we have them now as he then left them. But long before those periods practical men took to the family of Crocus, and we find that Parkinson, in 1629, described twenty-seven kinds of spring Crocuses, some of which have been lost; and Miller, in 1763, described four wild species of them, with twelve varieties of spring Crocus and four varieties of autumnal ones. His fourth species, biflorus (spatha biflora), is the biflorus of the present day, and the Scotch Crocus of the trade, Miller being the first authority in print for the English name. He describes the Scotch Crocus "with very narrow leaves; out of the sheath arise two flowers. The flowers are of a dirty white outside, with three or four stripes in each segment, the inside of the petal is of purer white." Weston, in 1771, compiled a list of which forty kinds were of spring Crocus; but it has not been received as genuine. Dr. Goldbach, in 1817, published a monograph of the genus in the *Memoirs of the Imperial Natural History Society of Moscow*, vol. v. M. Bouche made the same attempt in 1826 in "Linnæa," but subsequent discoveries soon rendered both incomplete. M. Gay, of Paris, had long been preparing a monograph of the genus, collecting from all quarters and cultivating them in the garden of the Luxembourg under his own eye, which monograph was published in 1831 in the "Bulletin de Ferussac." In 1826 Tenore and Bertoloni published papers on Italian Crocuses, and additions were since made by various botanists between Madrid and Athens.

Here, in England, Mr. Haworth published, in 1809, a paper on the cultivation of Crocuses in the "Transactions of the Horticultural Society," vol. i., page 122, in which he described thirteen species and varieties of Crocuses, eight of them being then considered as species. In 1828 Mr. Sabine, the Secretary of the Horticultural Society, began publishing his papers, on spring Crocuses only, in the "Transactions" of the Society, after being a collector and grower of them for thirty years; but, like a great practical gardener as Mr. Sabine certainly was, he confined himself almost entirely to garden seedlings and spring-flowering Crocuses, and said little or nothing of autumnal kinds, or about wild species. "Those spring plants," he said, "of which I propose to give an account may all, with the exception of Crocus pusillus and of the native British C. vernus, be considered as garden productions, or if not originally so they have been so long in cultivation as to have very much deviated from their natives types . . . . . . Those I propose to describe, and under which the varieties in the garden of the Horticultural Society have been arranged, are C. Susianus, C. sulphureus, C. stellaris, C. lagenæflorus, C. luteus, C. biflorus, C. argenteus, C. pusillus, C. versicolor, and Crocus vernus; all without doubt, with the exception above stated, ancient occupiers of the flower-border, but only recently distinguished and separated from each other."

Mr. Sabine divided all the spring Crocuses into three classes. In the first class are all the yellow and cream-coloured sorts, twelve in number, beginning with the Cloth of Gold, and as far as I can make them out, the whole of the twelve are referable to Crocus lagenæflorus of Salisbury in his "Paradisus Londinensis," 1806, except the Cloth of Gold; and lagenæflorus aureus, one of the twelve, is the very plant named in my text. It was afterwards figured by Sir J. E. Smith in his Prodromus of the "Flora Græca," vol. i., fig. 24 (perianthis aureo concolore) It is also figured in the "Botanical Magazine," t. 2986, in the "Botanical Register," and in "English Botany," 2646: so that my text plant can very easily be verified. Dr. Sibthorp says it grows in sand upon clay; and Dr. Herbert adds, "Certainly all the varieties of this species (lagenæflorus) seem to prefer a very light soil upon a clay subsoil, being planted 5 inches or 6 inches deep. Aureus so treated produces seed abundantly; planted near the surface upon sandstone, or in a damp situation, it thrives ill, and often perishes."

This last quotation is worth a cloth of gold. I have only studied Crocuses for the last six years, and I feared we were out of seeding kinds of lagenæflorus altogether. And as the Dutch growers seem to have only the lagenæflorus luteus, the large Dutch yellow Crocus, which is as barren, from long propagation from roots only as a mule, we were not likely to get much improvement from Dutch culture into our very earliest spring Crocuses; for the yellow kinds of this lagenæflorus and of reticulatus, to which Cloth of Gold belongs, and that Cloth just as barren from the same cause, are the first to bloom of all our spring Crocuses, just as the purple sorts of Crocus vernus are the latest we have to bloom in April; and the rage for large kinds of the breed of versicolor by the public is fast depriving us of all our very late Crocuses, and confining the blooming season of Crocuses to the month of March only. Then having a good seeder in my text plant, which is of the truest and earliest kinds of all shades of yellow, we ought not to lose sight of it, and every seed it produces ought to be saved as carefully as those of any plant in the garden until we have a whole race of February flowers from them, and get the best of them into the Dutch market, from whence they would soon get into great favour with the public. On the other hand, the very late varieties of Crocus vernus, as aprilis and tardiflorus, and some others of Sabine, ought to be sent into the trade exactly in the same way. Then suppose all that done, we should then have full three months of the spring as gay with Crocuses as we now have them for six weeks only. But I would fly at much higher game, for I am persuaded there are materials within our reach to render the season of Crocuses as gay and as full and varied from the 1st of September to the middle or end of May. Before I am done with my text, I hope I shall be enabled to prove this point to the satisfaction of most of those whom I should like to bear a hand in the application of my discourse.

The second class in Mr. Sabine's arrangement includes all the "spring Crocuses with varied coloured flowers (not yellow), having the mouths of the tubes without hairs." For this class eighteen kinds could then be found to answer to the "properties," the chief of which was the absence of hairs in the throat, the best feature by which they could be parted from the great mass of Crocus vernus, the varieties of which are readily distinguished by having the mouth of the tube, or the throat, filled up with hairs. The great mass of the Dutch Crocuses now in the market fall into this smooth-throated class. Our best white, best purples, and best feather shades from white to lilac belonging to it, and they all of them bloom in March, and are all referable to versicolor, which is a native of Nice and other places on the borders between France and Italy. When I tell you that the gentleman who first brought this fine Crocus into notice in 1808 is still hale and hearty, and, as I have just said, that Crocus is the parent already of all our best new Crocuses; moreover, when I affirm the fact, that there are twelve more kinds of wild Crocuses just as good as this versicolor, and some of them much better and blooming from November to February, I hope you will agree with me in my idea of having Crocuses eight months in the year as plentifully as we now have them in March.

J. Bellender Ker, Esq., then the "Mr. Gawler" of the "Botanical Magazine," and the "Dodman" of recent date, was author of versicolor, "Botanical Magazine," 1110. Dr. Herbert who studied the genus for thirty years with the keen eye of a practical botanist, says that versicolor and its allies—that is to say, three more kinds which grow near Naples, in Corsica, and in Sardinia, and called Imperatonius, suaveolens, and insularis, like the wild lagenæflorus like to have their bulbs or corms deep set in the ground. The prevailing colour of these wild kinds of versicolor, like that of their great grandchildren now in our gardens, is white, sometimes suffused with purple, and generally more or less richly streaked with purple on the outside. And [illegible] more kinds of the same breed as the Scotch Crocus (annulatus biflorus), make up the second class of Mr. Sabine's arrangement. [illegible]

with various coloured flowers (not yellow), having the mouths of the flower-tubes hairy." Thirty years since the great bulk of the Crocuses belonged to this last class, all of them derived from Crocus vernus, and from a few of its wild varieties. Mr. Sabine had fifty-seven kinds of them, which he divided into seven sections according to the colour and markings of the flowers. The seventh section of which, however, is of any value in these days, and I want most particularly to inoculate the genuine spirit of a thorough-bred florist into every single individual reader of this Journal, if I knew where to get the inoculating lymph, in order to set us all running and racing after the April, the May, and the June-flowering wild kinds of Crocus vernus.

All the very late spring Crocuses are of some shade of purple up to lilac, and are descendants of two or three wild kinds of Crocus vernus, natives of the south of Italy. The smallest kinds are from Crocus alpinus, first mentioned by Mr. Sabine, and possibly yet in Middlesex; and it would be an excellent one to get seedlings from.

Crocus vernus aprilis of Sabine is admitted by that name by Dr. Herbert, as a true wild kind of vernus without any locality being assigned; but it must be in the south of Italy, and, probably, on some of the sub-alpine ranges going into Calabria. Mr. Sabine says of it, "Too much cannot be said of this variety. During the whole of the first part of April it renders the garden gay with its richly coloured and numerous blossoms." The "rich colour" being a fine violet purple tint. This, also, was a seeder and would be most valuable now. Crocus vernus neapolitanus of Sabine, was a garden plant and figured as such in the "Botanical Magazine," t. 2240; but the wild Neapolitan Crocus vernus blooms in Italy as late as June, piercing through the snow. Dr. Herbert says, "The finer purple Neapolitan variety inhabits the loftiest mountains of Calabria and Lucania, not descending lower than 5000 feet. On Monte Polino it flowers as late as June and July, reaching an elevation of 6000 feet. On the Wengern Alp its flowers actually pierce the remaining snow in June." Now, who will join in an excursion next August to the top of Mount Polino, and get a quart measureful of the seeds of the finer purple Neapolitan Crocus, and a basketful of the "roots?" or shall we let M. Louis Van Houtte, of Ghent, steal a march on us and bring it into the Belgian market first, or is it already in England? Dr. Herbert had it at Spofforth, but what became of his rare collection of Crocus I never heard.

Dr. Herbert's enumeration of the whole family, as far as they were known up to 1846, was his last contribution to practical and to scientific botany, and one of the most really useful of all his labours in that line. It was just ready for the press when he died, and it was edited by Dr. Lindley, and published in the Journal of the Horticultural Society at the end of 1847—a very unfortunate time for the family of Crocus, for, what from being then at sixes and sevens amongst ourselves, and from all our subsequent "proceedings" being on the sliding-scale system downwards till a recent period, the public at large took very little heed of our "Journal," and I mean to try and see what can be done for this alpine family in THE JOURNAL OF HORTICULTURE, as soon as it can find room for me and them, or most of them. Meantime I would propose a regular hunt for all the very early and very late spring Crocuses from the end of January to the end of August.

They were to be had in England in plenty as late as thirty years back. Now, there are hardly half a dozen species in the hands of the Dutch growers for supplying all our wants, and of them most of us are content with the strain of three of these species. First, they have the Saffron Crocus (sativus); secondly, the vernus, then versicolor, the pride of our pluck; after that lagenæflorus, and last of all, biflorus, or Scotch Crocus, which, by the way, is not a species but one of the varieties of Crocus annulatus—not a rap more to go to market for. But if I could get the steam on I should have "a Sardinian correspondent" for my own self; another at Trieste, to hunt up and down both sides of the Adriatic, and cross it as far out to sea as the season suggested, searching the Ionians from either side as the wind permitted. But the best wild kinds of Crocus vernus are from the steppes behind Odessa.

One would think that Crocuses, which are all so much alike and which, in a wild state, appear to have a decided preference for calcareous, and hilly or alpine regions, thus exhibiting one constitutional tendency, would readily cross and be improved that way, but the contrary is the fact; no one has yet succeeded in getting hybrid Crocuses, that is, between distinct wild species.

There may be cross-bred varieties, and Dr. Herbert thought he had succeeded in getting a few hybrids, but only one or two that he was sure of, after an experience of thirty years.

I have had a touch at them, and I have now in bloom evidences that the best pure whites, the best purples, and the best feathered purple, lilac, and white of the Dutch growers come just as true from seeds as the species—that is to say, that 75 per cent. of their seedlings are just as the parents, and the rest improvements on or inferior to their original kinds. No one of them comes more true than Sir Walter Scott and Queen Victoria. From a patch of either of these seeds enough will ripen to produce a row of the sort one mile long. I made that calculation, reckoning twenty flowers in the patch. The easiest way to fill the three kingdoms with Crocuses to line both sides of all the railways would be this: To mark the best flowers now; to gather the seed at the end of May or before the pods bursted; to keep it in the pods one month, and at the beginning of July to draw drills exactly as for Sweet or pot Peas; to sow the Crocus seed about as thick as garden Peas should be sown in January—that is, pretty thick, to allow for a picking to the birds, and to have a full crop besides; to drive down a stake at each end of the rows, as for marking Asparagus-beds; to let the "roots" flower before they are disturbed; and to pick out all the bad ones, leaving the best to finish that season's growth. Many will bloom the third season, and some not until the fourth; but much depends on the goodness of the soil, and it cannot be too good for them. The seed-pod is always underground, and comes up to the surface only when the seeds are ripe, and that generally when the leaves are ripe also, and as some of them seed like weeds, the pods should be caught as soon as their heads appear, to destroy them if the seed is not wanted, for nothing spoils effective arrangements of the flowers so much as self-sown seeds, unless the roots are taken up every year. Many kinds of the very old Crocuses are now quite barren from having been propagated only by the roots.

None of the Crocuses are natives of England, though in some places, as in the extensive meadows at Nottingham, they have taken the same hold of the soil as native Crowfoots, having first escaped from cultivation. In the same way, the most tiresome weed in the market gardens between Richmond and Battersea, is a native of Mexico, escaped from Kew Gardens within the memory of persons still living there. No one knows where the Saffron Crocus (sativus) is a native of; but as Saffron first acquired celebrity in Asia, it is presumed to be a native of some parts bordering on Syria. The Arabic name, Zafaran, and the Moorish and Spanish names, Azafran and Safra, go a good way to uphold that opinion. The Italians call all Crocuses Zaferano, and the French Safran, so that a Sardinian correspondent, if sent from Surbiton, would need to know all that, if only to assist him with the natives in hunting them out. If ever I send out a collector of Crocuses, I shall first tell him where to begin on the coast of Portugal, thence to both sides of the Pyrenneau and Italian Alps; then on to Dalmatia, the Banat of Hungary, and the Balkan to the Bosphorus; back again to the blue bells of the Carpathian ridge and South Podolia, thence by Odessa to the Alma, Inkermann, and Kertch; then across to Caucasus, to the head of the Caspian, and lastly to turn to the right to Mount Taurus, return by Damascus, and take all the islands of the Mediterranean on his way home, after picking up the only sort in Africa on the hills near Tangiers.

D. Beaton.

THE CAMELLIA AND ITS CULTURE.—No. 4.

Temperature.—It is really wonderful, so to speak, how accommodating Camellias are. In some places you will find them growing and flowering in delightful profusion among a miscellaneous collection of plants—such, for instance, as those possessed by your fair correspondent "A. Z.," who, with praiseworthy zeal, has managed for a number of years to have many choice flowers to please the eye, while at the same time and in the same house she has been able to obtain fine fruit to regale the appetite. Here is a fertility of expedient, and a practical exemplar of what can be done by those ladies who take a lively interest, as this lady has done, in the doings and success of cottage garden societies. In order to set ourselves right, however, with your fair correspondent, while applauding her efforts and success, we beg to remind her that now-a-days it requires all the efforts of first-class gardeners, with first-class accommodation, to produce first-class samples of either fruit or flowers in return.

There can be no better place, then, for cultivating Camellias to the highest state of perfection than a house specially set apart for their use. Comparatively, few private places in the country can boast of such a structure, and yet there are not many species of plants under cultivation that offer a better speculation with the same amount of care. The demand is almost unlimited, from the positive large to the superlative largest, from the two-shilling up to the twenty-guinea plant, and why? because the plant in the three-feet or four-feet tub is just as healthy and as likely to be so for half a century to come, as the plant in the 6-inch pot. Those that have houses of the above description will have the very important advantage of letting the plants have the temperature best suited to their wants. There will also be less manual labour required; for, as is well known, where the accommodation is limited and the demands for space from other subjects entitled to your distinguished consideration equally pressing, it is then absolutely necessary to be fertile in expedients—moving this section here *pro tempore*, and that section there, and mayhap baffled to meet your requirements in such a way as you would wish. Such is no exaggerated picture of the majority of garden establishments from March till May.

But observe, that if there is a demand for a succession of bloom for a period of eight or nine months in the year, one house will not be sufficient. One uniform temperature for the entire collection throughout the season will not be effective in its results. You may select early-flowering sections and late-flowering sections, and after bud-formation keep some of the earlier in-doors, and some of the later out-doors, and by this method occasionally secure a six-months succession, which, in many cases, will be all that is requisite. Much, indeed, depends upon climate. In this cold, northern locality upon the banks of the fresh-water Clyde, where we have a long winter and short summer, and all the evils concomitant with an excessive rainfall, it is highly injudicious to place Camellias out of doors; for even with the best drainage and most careful attention they will get so saturated that you cannot depend upon them retaining their buds. I agree with your very able correspondent "D., *Deal*," that this is one of the prime causes of failure. I may add I am very much pleased—indeed, it would be the merest affectation to conceal it that some of my remarks have met with the approbation of a gentleman of his philological and practical knowledge. It was our practice for a number of years to place them out of doors as soon as their buds were properly developed; but we never could count upon that success which has uniformly attended our efforts since we kept them at all times under glass; not that it is absolutely necessary to do so where climate is favourable and rainfall moderate. It is our opinion, that at that particular period of annual development they require all the solar light possible, without, recollect, being subjected to the direct rays of the sun; so that, if all other things were equal, a shaded, sheltered situation out of doors would undoubtedly be preferable.

In order to insure a lengthened period of bloom, it is necessary to divide them into three sections—the early, the ordinary, and the late. Some may be inclined to combat this point, and lead respectable proof of certain results with less systematic appliances. If you wish to make certainty secure, we always think it is wisdom to work on a preconceived plan; to adopt that which experience proves effectual, and to modify or discard altogether that which may not be suited to localities, circumstances, and such like. Our plan, then, is to select a batch of those which have a tendency to bloom early and to bloom successfully; for if you attempt to get Duchesse d'Orleans, Teutonia, Valteverado, and some others before Christmas, they will not expand to the very centre of their bud; at all events you cannot depend upon them (some of the varieties even with the very best treatment, flowering at the most suitable time, have a tendency in this direction), whereas Fimbriata, Alba plena, Imbricata, Lady Hume's Blush, Saccoi nova, Henri Favre, and some others will bloom well at any time they are called upon and prepared for. We have a batch of the above that bloom from the end of September up to Christmas. These are what we call the "early section," and this the prescribed time. They are cleared out of the conservatory as they are done blooming, and transferred to a cool vinery. The vinery in question, we begin to force never earlier than the third week in January, and never later than the first week in February. This batch has a clear month's rest, some of them move at a minimum temperature of not less than 34°, and not more than 45°. The wood-buds begin to be pretty prominent just as the house is prepared for forcing, and they come away at a gradual rise of temperature suited to the progress of the Vines. I may here state that this section scarcely, if ever, drops a bud. Many of them, on the contrary, have freely to be disbudded; and I can, with the greatest confidence, rely on them if they are in proper condition at the root.

I now redeem the pledge I gave in one of my contributions to THE JOURNAL OF HORTICULTURE with reference to variegation in flowers. I mentioned that I had hit upon a plan for insuring every individual bloom of Camellia Imbricata to come blotched, and not only does Imbricata come so, but all those which have the least disposition to variation. In the course of experience, I observed the flowers that had a tendency to sport were very much superior as sports if they happened to be in bloom during December and the early part of January. I noted the fact particularly, and further observed those that unfolded their petals in March and April had very much less inclination to sport; many of the plants showing a large majority of self flowers, and those that were blotched only very partially so. I resolved definitely to test the value of the hypothesis formed within my own mind, and selected three or four plants of Imbricata that had done blooming in the beginning of March. These were placed at once into a temperature ranging between 50° and 60° during night, and 10° or more higher during the day; they were subjected to strong heat, and proportionate abundance of moisture until they had formed their flower-buds, and were then transferred to a house where they had abundance of air during the day, and a moderately warm temperature, caused by early shutting-up the ventilators during the night. This treatment continued to the end of August, after which they had free ventilation both night and day. They succeeded quite as satisfactorily as their congeners, showing abundance of bloom, and some of them opened their first flower early in October, continuing to bloom until new year's day. I need only add that every individual bloom was all that could be desired for sportiveness, and gave the most unqualified satisfaction. Poverty at the root, in general, is one of the best means for promoting variegation in leaves. The plants that produced these flowers were as liberally treated as the most robust samples in the collection, and the foliage was rich in chlorophyll; on the contrary, one or two tiny examples of the same variety produced small flowers with no disposition to variation. Several authorities in chemistry aver that plants give off oxygen by decomposing carbonic acid during the day, and absorb the latter again at night; whereas flowers perform a somewhat different function, by absorbing oxygen at all times and emitting carbonic acid. It is true, nevertheless, that flower-buds do not differ essentially from leaf-buds, and in many instances, the apportioning of them is within the control of the cultivator. Such is an epitome of our practice with reference to those classed under the "early section," which includes all the varieties that we wish, and can trust being speckled and spotted.

Those classed under the "ordinary section" are placed in the vinery mentioned above, as soon as they are blooming in the conservatory. The last flowers, especially during March and April, are not quite expanded when the leaf-buds burst and the young leaves are in process of elongation. By this time the Vines have made considerable progress, and afford by their leaves sufficient shade to the tender shootlets from a scorching midday sun.

Those classed under the "late section," require to be retarded as much as possible consistent with success in blooming them. A sprinkling of Camellias in bloom during the month of May is certainly, as they always are, a nice feature in a mixed collection of plants. The length of the day, however, and the great call upon the physical energies of the plant render the blooms comparatively short-lived. It is absolutely necessary, in the first place, in selecting a batch for flowering at this period to fix upon *bona fide* late bloomers. As I suggested in a former communication, Bealii is one of the best for this sort of work, along with which might be named Candidissima, General Zucchii, Princess Bacchiochi, Duchess of Buccleuch, Cup of Beauty, Archiduchesse Augusta, Rubini, Cavendishii, and Feastii. They should be wintered in a temperature at a minimum of 34° and 40°. On one occasion, I retarded Bealii in a house where the temperature occasionally fell to the freezing-point, until the second we[illegible]une, some stray blooms remaining ten days [illegible] will stand as much heat with superabundant moisture as any plant under cultivation, so will it also live and thrive in some way when subjected to rigorous cold. I have known Camellia-stocks to live over a severe winter out of doors uninjured, when the young shoots of the Portugal Laurel were nipped. It is not advisable, albeit, for those who wish to grow them as decorative plants, to subject them to a temperature under the freezing-point. From March till the time of flower-buds expanding, this batch ought to be kept as cool as possible, with rather an over than an under proportion of moisture in the atmosphere. An exact counterpart of an atmosphere that is required to winter successfully soft-wooded greenhouse plants. It is almost unnecessary to mention, that that part of the house where they are located should be shaded from midday suns to modify the temperature. By following up this method with two years' preparation, you may calculate upon being in a high degree successful. The stated period of retardation, and the sequent process, mark you, is after their buds are properly formed. There must be no "hungering" them of temperature at the proper time. They require when done blooming as high a temperature as any of the other batches, as many of them will not bloom annually otherwise, and some of them cannot be coaxed by any means.

It remains for me only to state, that the temperature for their successful cultivation throughout the year, should not be a sudden transition from a low to a high, and *vice versa*. It is necessary that this should be thoroughly understood, for inattention to small matters, and this among the number, at a certain stage, is also one of the causes of bud-dropping. A low temperature during the development of the young shoots, as well as during the greater part of the process of consolidation—at all events until the foundation of the structure so rapidly called into being exhibits some degree of strength and flexibility—is inimical to bud-formation. You may err as much as you please on the side of heat, with corresponding moisture and proper shading, with desirable results; but by all means try to place them in an atmosphere between 55° as a minimum for night, and 90° as a maximum for day temperature, and if you are right in all other respects you will have flower-buds in abundance.—JAS. ANDERSON, *Meadow Bank, Uddingstone.*

COMPARATIVE COST OF WOOD AND IRON FOR HORTICULTURAL ERECTIONS.

I WRITE to give my experience as to the above.

Having a wall of brick already erected (which must be taken into account as between a span-roof and a lean-to) 300 feet long, I wished to have 50 feet glazed as a lean-to, and having been told that iron houses were the best, and were made and sent ready to be fitted together, I applied to a builder of that sort of houses. The estimate sent was an uncertain one, from £110 to £120. I then applied to our own carpenter, who contracted to make it of best Dantzic timber for £11 10s., and not to exceed £12. Of course, I chose the latter, and the house was commenced ten days ago, and is nearly finished. One-half of it is glazed. I sent exactly the same measurements to each party. The iron builders' estimate included ventilation. The carpenter's did not, so I must add that to the sum of £12. Ten of Moore's patent ventilators at 14s. each will be £7, making the total cost £19, instead of £110 or £120.

I have a wooden vinery, and added an iron one to it of same pattern. It was done by our country whitesmith at a much cheaper rate than that of the estimate of £110, comparing length and breadth of the two.—A SUBSCRIBER.

CYCLAMEN EUROPÆUM.

MR. BEATON desires us to thank "T. C." for the anomalous Cyclamen europæum which he sent. Mr. Beaton says he never saw the like before, and was not aware that the European Cyclamen ever assumed that character, or that it was a native of so far south as Genoa. It has been often asserted that it did not extend beyond the Po. Have you seen it in flower in Savoy? If not, depend upon it the plant is vernum. This plant was dug up in 1860, in a rocky district ten miles south of Genoa. The leaf is exactly that of europæum; but the species is very variable in the form of the leaves, and it has the gouty spur on the top of the bulb which is the chief characteristic of vernum; the leaves and the flowers come from that spur and not from [illegible] of the bulb in the usual way

Such Cyclamens, probably, could be propagated from cuttings just as easily as Gloxinias. The spur cut into as many pieces as there are leaves on it, every piece would make as lawful a cutting as any from the stem of a Begonia.

The seedling from "a genuine coum" is a true cross between it and persicum, not vernum, and there are many just like it in the Wellington Road Nursery, where a lovely race is now really splendid and well worth going to see. But what shall we say if persicum was not the father?

Pray arrange "your facts and thoughts" on Cyclamens, and, as soon as convenient, let us have them in full. There is one fact that Cyclamen people ought to know, and it is that there is a decidedly distinct species of Cyclamen now in bloom with the Messrs. Fraser, of Lea Bridge Nursery, that has not yet been described, unless it was by Dr. Sibthorp in his "Flora Græca." We have seen the kind in bloom three or four years since.

PROTECTING SEED FROM MICE.

To prevent the ravages of mice in sowing Peas, the following plan has been used with perfect success:—The Peas are first soaked in water for an hour, then drained from it; and to a quart of the seed stir in a good tea-spoonful of resin in finest powder. It in no way injured their growth, and was a perfect preventive to the mice touching them.

A friend of mine has lost by mice all her Gladioli bulbs. I have a large number to plant, do you think I may adopt the resin for them, of course not soaking the bulbs, but only moistening them to make the resin adhere?

Is Yucca gloriosa superba quite hardy, so as to be planted on a lawn?—A Subscriber of Four Years.

[Powdered resin is not a novel suggestion as a protector of Peas against mice; but moistening them to induce the powder's adherence, we think, is. If the powder will protect Peas, we have no doubt that it will equally protect Gladioli bulbs.

The Yucca is quite hardy enough to endure our ordinary winters on a lawn.]

THE MANETTI ROSE STOCK.

Mr. Beaton is full of experience in many things, as I am sure we are all willing to testify; but he is but a youth in Rose culture, or he would not have said, page 445, "You will have no end of trouble if you bud Manetti stocks from a nursery—you will never be free from Manetti suckers as long as you live." This seems to me discourteous in the extreme to a body of most respectable men, and is, moreover, as far as my experience has gone, entirely incorrect; for it implies that Manetti stocks bought from a nurseryman would poison the ground with root-suckers, or "spawn," as such things are often called.

I repeat that, although I have known the stock thirty years, I have never seen it put forth root-suckers to any extent; so that to verify his prediction that those who buy Manetti stocks from a nursery will never be free from them, the buying cultivator must cut off the stem-suckers and make cuttings of them, as they will not spread of their own free will like Raspberries or Dog Roses. My conviction, with regard to the non-effect of cutting out the buds, dates about ten years back, although long antecedent to that period I had made it a common practice; but I think it was soon after then that I found out the only method to keep the dormant buds from breaking was to bury the stem. Experience gave the hint after this manner. I much wished to have near my house a bed of those most brilliant, but rather delicate-growing Roses, Comte Bobrinsky and Comte d'Eu, budded on stems about a foot in height, and so I had Manetti cuttings carefully disbudded and budded with them. They grew well the first year, the stocks not having got a firm roothold; the second year the stems commenced to burst with vitality, and numerous clusters of stem-suckers made their appearance—these were removed very frequently, but the heads languished; the third year there were more stem-suckers than ever, and my favourite Roses became mildewed and died. I observed this propensity of the stock, even when budded with comparatively free-growing kinds, if any considerable portion of the stem of the stock was exposed to the air, and this led me to that most successful method, now general with all who understand Rose culture—viz., to bud very low and bury the stock; to plant the cuttings as directed in my last paper; to transplant them, and bud as near the root as possible. In early times, probably before Mr. Beaton ever heard the name of this stock, I used to have the cuttings planted in ridges (they were alway, disbudded just as we do Currant cuttings), the earth drawn away and the buds inserted; but the ridges in hot weather became dry, budding was difficult, and the plants, although vigorous, were not well rooted; so as soon as my stock allowed me to do it, I had the cuttings transplanted after remaining a year in the cutting-bed, and this method I still practise.

If the soil of Mr. Beaton's garden really does induce this stock to put forth root-suckers, so as "never to be free from Manetti suckers," I should feel much gratified if he will one day leave a specimen at your office. I know so well how capricious soils are in their effects upon trees and plants, that although I have never seen a Manetti Rose full of root-suckers, I should not be surprised at seeing one.

It will require two or three years before I can again test if disbudded cuttings will put forth suckers from their stems when exposed to the air; but I shall, if spared, "try again."

In writing about this stock, I hope I have not penned a sentence tinged with asperity or discourtesy. Mr. Beaton's experience seems to differ so widely from mine, that I felt compelled to notice it.—A Nurseryman.

P.S.—I accept Mr. Beaton's challenge which he gives, page 477, in nearly the following words:—"I will disbud any Rose-shoot of last season's growth, or the leading shoot of any tree or plant in our climate, and I will challenge, after doing it, all the practice of Europe to get one single cluster of buds to grow from any one of them." I shall, therefore, beg my old friend to accept of a few young trees of Rhododendron ponticum to disbud. How delighted he will be to find not a cluster of buds only, but every portion of the stem alive with them, if the plants are treated kindly.

[This comes of jumping at conclusions from what appears in the columns for correspondents, the particulars which guide the answers not being known. I said nothing about root-suckers in that answer, and the "Nurseryman" said there are two sorts of suckers. I would lay my head to be shaved if there is one nurseryman in Europe who could keep the Manetti Roses, which were described to me in that question, from producing suckers as long as the plants lived. The plants were little "stools," with from three to five shoots issuing from the collar, and there were two layers of growth in them. And I am ready to prove that no man on earth could keep these plants from throwing up suckers from above the collar to the end of their lives. I have been too long on the turf, and I am too well known to take any offence at the charge against me for discourteousness. Everybody tells me I am too much the other way, and they say what everybody says is true.—D. Beaton.]

ROSE CUTTINGS.

In The Journal of Horticulture, Vol. I, page 307, you say that "the last half of March is the best time for making Rose cuttings. Three-inch little side shoots slipped off with a heel the best sort of all Rose cuttings."

By these "three-inch little side shoots" do you mean the young tender shoots of this year, or the ripened wood of last?—A Rose-fancier.

[The ripened shoots of last year.]

ICE-STACKS.

Having, at the suggestion of my worthy employer, adopted ice-stacks for preserving ice, I write to state that I have every reason to be perfectly satisfied with the result of twenty years' experience. We never fail in keeping it for twelve months, or much longer if it were necessary. On the 18th of January last, when I had the heap uncovered previously to putting together another year's supply, there was a large body of ice left (which is not disturbed), and is sufficient to have lasted till midsummer. On one occasion the house was supplied with ice from the same heap for two years.

Believing the method we adopt to be the most certain and the most simple way of keeping ice, I will give my practice in detail.

The situation of the heap is a dry loamy bank, surrounded with large Beech trees, which partially shade it from the mid-day sun. It is 30 yards from the pond and 6 feet above its level. It requires ten men for three days to put up the heap, and the way we proceed is as follows:—We use a boat to break and float the ice to the side, which is thrown out and broken just sufficiently small for the barrows; it is then wheeled to the site, and thoroughly broken as it is thrown down. I have sometimes used a little snow with the ice, which saves considerable labour in breaking. When the heap is about 4 feet high the ice is wheeled upon planks, lifting them higher as the heap progresses, which when finished is in the shape of a cone 12 feet high and 15 feet in diameter at the base. It is then covered a foot thick with clean Beech leaves, and in about three weeks we give it another covering of leaves of the same thickness; a few branches are then thrown over the leaves to keep them in their place, and the ice is secure.—J. GREENSHIELDS, *The Gardens, Sarsden, Oxon.*

COCOA-NUT FIBRE REFUSE.

YOU were not much in error in saying it could only be obtained here; because, if it can be got elsewhere we believe it must be from parties who are infringing Barsham's Patent, which has not expired. We have, from the date of the patent, been interested in it, and are now the sole proprietors.

It is only two weeks ago we succeeded in obtaining a verdict in an action against one Pulmer for infringing this patent. The trial, a short statement of which is given in the *Times* of the 26th of February last, lasted three days. Some few years ago a person at Bristol was using our patented process, but we understood he discontinued after a notice from us. Should he or any one else be doing it there now, we shall, of course, interfere.

Mr. Barsham gave the name of "pulp" to this refuse, but it is more like sawdust, though not so perishable. A large heap of it has been on our premises for nine or ten years, and it does not appear to be decayed in the slightest degree. There is a quantity of short fibre in it which answers admirably for draining at the bottom of flower-pots. In page 473, of last week's Number of THE JOURNAL OF HORTICULTURE, is described a method of making "hotbeds without manure." We have no doubt the cocoa-nut refuse would be an excellent material for such purpose, treated in the same way with less proportions of lime, acid, and water, and that it would retain heat for a very long period. In the International Exhibition we shall have specimens of this cocoa-nut refuse. You will observe by our advertisement that we supply small bagfuls at a low price; but if any person requiring a large quantity will write to us, we will make a great reduction in the price.—THE PATENT COCOA FIBRE COMPANY, *Kingston-on-Thames.*

SUCCESSION OF FLOWERING PLANTS IN BEDS.

WILL you inform me what plants would be suitable for planting out in beds with Asters, to flower in June, July, and August, to make a show till the Asters begin to bloom?—AN INQUIRER.

[Scarlet and Variegated Geraniums, Calceolarias, Verbenas, and blue Lobelias, with Variegated Alyssum—all bedding plants. Then Delphiniums, of which formosum and Hendersonii are the two best for the purpose, and spring-sown Clarkias and Collinsias, with Gilias, and many other early summer annuals.]

MANAGEMENT OF TROPICAL FERNS IN POTS AND IN A ROCKERY.

[illegible] HAVE a considerable number of tropical Ferns, growing [illegible]me in pots and some in rockwork. Will you tell me whether [illegible]e first require repotting, and if so, what is the best time of the [illegible]ear for so doing? And, also, whether those in the rockwork [illegible]ill require fresh soil about the roots, and when should that be [illegible]

[illegible] for potting tropical Ferns is early in spring, the [illegible] of March will do very well. Ferns make abundance [illegible] fibrous roots, and, therewith, quickly fill their pots: [illegible], they require repotting at least once a-year. Some of [illegible]e stronger growers may even require [illegible]tting a second time [illegible] of course, in small pots, and when the pots are filled with roots they ought to be repotted directly. Ferns suffer greatly from drought. Indeed, when once the ball of earth becomes thoroughly dry the plants in nine cases out of ten will perish. If ever you observe them drooping very much, you had better place the pots in a vessel of tepid water and let them remain for an hour or two till the ball of earth and roots have become thoroughly soaked.

The proper soil for Ferns is a compost of two parts of sandy fibry peat, one part turfy, and one part leaf mould, with plenty of sand added. Mix them thoroughly, but do not sift the soil, and previous to potting let the compost be placed in a warm room to become aired and moderately dry. Then pot them, giving them a moderately liberal shift. Drain well with clean broken pots, covering the drainage with a layer of the rougher parts of the compost. Then place the ball in the centre of the pot and fill all round it with the compost, taking care to press it down pretty firm, and leave a space of the pot unfilled to hold water sufficient to wet the whole of the soil in the pot. When pots are filled quite full the water runs off over the rim, and then the ball does not get moistened, neither to the centre nor yet to the lower parts; consequently the plant is starved for want of water. This is a serious evil, and many a fine specimen has gradually sunk under such treatment. Avoid this error by leaving the soil in small pots a quarter of an inch below the rim; the next size half an inch, and so on till in large pots, an inch and a half of space to hold water is left at the potting time.

Your Ferns planted out amongst stones in the rockery style will be greatly benefited by a good top-dressing of fresh compost every spring. Previous to laying it on, scrape away as much of the old soil as you can without injuring the roots. If, however, you keep the rock stones moderately moist, the Ferns will grow there much finer than in pots, the roots will penetrate deep into the soil and find nourishment even from the stones themselves, for if you remove a stone placed near a Fern you will see the roots adhering to it like hay.]

APRICOTS UNDER GLASS.

MANY of your readers have, I doubt not, Apricot trees in orchard-houses now in full bloom; they should be most careful in giving them abundance of air. A cold north-east or east wind will, if admitted freely in the daytime, dry the pollen and assist in setting the fruit. Those who have travelled in the south of France in March when the Almond and Apricot trees are in bloom, and have felt that bitter "bise," or north wind, which seems to assist in setting the fruit, as the trees (unless injured by still hoar frosts) always bear abundant crops, will not fear to allow our comparatively mild March winds to blow through their houses.—T. R.

ADD GARDENS TO YOUR COTTAGES.

VERY recently the Rev. F. Trench delivered an admirable lecture to the Botley Farmers' Club on "The English Labourer in the different stages of his life." He sketched him from "schooling time" to ladship, from manhood to old age, pointing out truthfully, wisely, and eloquently what the labourer should do for himself, and what others should do for him in each of those periods of his career; for, as the lecturer observed, "the labouring man has claims upon us all which we ought thoughtfully to recognise, and manifest too, not in feeling alone, not in words alone, but in deed and in truth."

We regret that we must not devote space enough for large quotations from this lecture, but we will find room for the noble conclusion agreed upon by the assembled farmers; for it does them infinite honour, and is in unison with the efforts we have for many years directed towards the same object.

A discussion ensued, says the report, which turned principally upon the necessity of providing better cottages for the labourers, the evils which arise from taking children too early from school, the beneficial results of the allotment system, and the prejudicial effects of the law of settlement, after which the following resolution was submitted to the meeting and agreed to:—

"The condition of the farm labourer in the various stages of life can [illegible] very much ameliorated by providing him, as near as possible to the scene [illegible] his labour, [illegible]th a cottage containing sufficient rooms for the security of the [illegible]

> eding one-sixth of an acre, but regulated by the size of his family, ficient to raise vegetables for his family, and employ his surplus without encroaching on the strength due to his employer."

that resolution we give a hearty and unreserved assent; e result of half a century's observation of the labourers he plough and the spade is fully in unison with the ns which that resolution embodies. A garden is a bless- aced at the disposal of the cottage tenant; it supplies him is with healthful food and healthful occupation; adds r charm to his home, and whatever renders that attractive ns the attractive power of the beershop. We, like the r, have known many a labourer at the close of life cling- th fondness to "his old beloved cottage"—and we can ith unexaggerated truth that it has been in every instance ge with a garden.

* * *

MR. WILLIAM PAUL'S NURSERIES, WALTHAM CROSS.

name of Mr. William Paul is familiar to every lover of ueen of Flowers as an authority to whose decision all her ts bow; and now that she is beginning to develope her ng honours, a visit to his extensive grounds will amply the horticulturist, whether amateur or professional, for the which he may thus employ. And from what we know W. Paul—and we have known him long—we can assure tending visitor, to whichever class he may belong, that he eet with every facility in examining the treasures which tablishment contains.

nding most of our time in the great city, a run into the y is a rarity to us, even when there is something particular seen; and though hardly prepared to expect much at this , we resolved on a trip into Herts, where, out of the reach turmoil and smoke of the town, oxen are still to be t plough, and windmills still picturesquely crown the dis- minences despite the invading power of steam. Availing ves, however, of this, we were in half an hour at the am Cross Station, to the platform of which Mr. Paul's ds immediately adjoin, and for the benefit of our readers ll now endeavour to detail what we there saw.

entering the nurseries by the walk which leads by the side of lway we noticed a number of Roses trained against the paling parently not long planted, but which, when full grown, fford an admirable screen. Farther on we come to the d devoted to the growth of fruit trees and hardy shrubs, ying an extent of thirty acres, the soil being a fine mellow between 3 feet and 4 feet in depth, with a substratum of —admirably adapted for fruit trees and indeed all kinds of , so friable that on touching it where it had been thrown fell to pieces like slaked lime, and to use a term not recog- by chemists, but well understood by gardeners, "fresh"—that from the inert vegetable soil with which old gardens so abound. Nearest the railway the soil is of a lighter ter than elsewhere, being rather a light loam but not too so—here are Rose-stocks by the thousand, or, rather, by f thousands, all waiting the process which shall convert into the pride of many a garden. We also observed by de of a grass walk running parallel to the railway a row, 300 yards in length, of trees of such kinds as are most ental either by their flowers or foliage, or weeping pendu- abit; when farther advanced these will form a pretty round to the nurseries, and cannot fail to be interesting to avellers who pass along the line. But alas! such is the ty of modern transit that there is scarce time to observe, e objects have faded from our eyes—a pleasant memory othing more.

m this lower part of the ground a broad grass avenue, a r of a mile in length, leads to the offices and glass struc- (though for use in wet weather, there is a gravelled path l), and on each side of this avenue are alternately small r and larger oblong beds filled with evergreens—such as odendrons, Kalmias, Yews, &c., and a multitude of Holly- . In the quarters adjoining we noticed Berberis aqui- , even though not in flower looking very attractive by its -coloured foliage, and showing for bloom. Also a fine of pyramidal Pear trees, healthy and clean as could be d, with their buds just bursting. We must also not o notice a permanent lattice fence for training fruit trees intended for cultivation against walls—such as Apples, Pears, Plums, Peaches, and Apricots; and when we state that the top rail is 7 feet from the ground, it will at once be seen that these fruit trees can be transferred to the walls in a bearing condition—an important consideration with all and especially with those who dread the verification of the saying, "He that plants Pears plants for his heirs."

Among Coniferæ were several fine plants of Wellingtonia gigantea some of which were planted only a twelvemonth ago, then not more than 6 inches high, now 18 inches at least—a proof of how rapidly this valuable tree grows under favourable circumstances.

From considering these incipient giants we passed to some tiny individuals of the same family, only growing to the height of 2 feet or 3 feet. Of these there was a good collection, among which the Dwarf Spruce Abies excelsa pygmæa, A. stricta, with small bright green foliage; A. Gregorii, and A. variegata, with whitish or pale yellow leaves were the most striking; A. Findoniensis, which attains a greater elevation, is another kind with variegated foliage. There were also some fine plants of A. Menziesii, with vivid green leaves; and A. Douglasii, with bright green, somewhat glaucous leaves, forming in its native countries a stately tree of from 150 feet to 200 feet in height; the same kind of Pine in fact as that which furnished the lofty mast that is to be seen at Kew, and which created so much sensation at the time it was raised.

We were particularly struck by some specimens of a Black Yew, which was of a more branching and pyramidal habit of growth than the Irish, and better clothed at bottom where other kinds are apt to become bare and unsightly. Being also of comparatively slow growth it is admirably adapted for the centres of beds and for low hedges.

Having thus glanced over the hardy department, we will now pass to the houses which are situated near the high road leading through Waltham Cross towards Edmonton, and thence to London. They are all built on the same plan and heated by one boiler of the saddle description, having projecting wings at top so as to catch the full influence of the fire; it is, as near as we could judge, about 5 feet 6 inches in length, and in connection with it are about 2000 feet of pipe; but it is capable of heating a much greater extent.

All the houses here are numbered—a system worthy of imitation in other extensive establishments, if not for the sake of the persons employed, yet highly desirable for the convenience of visitors and for the purpose of description.

The first one which we entered was a span-roofed structure, 50 feet long by 18 feet wide, and 10 feet high on the inside. For the purpose of ventilation every alternate front light, each 4 feet long, is made to open by means of hinges and a quadrant arm, so that any amount of air can be given at will. Ventilation at top, a point which is too often disregarded, is also provided for by moveable lights which can be opened or shut by means of a pulley; it must be remembered that the tendency of heated air is always upwards by reason of its smaller specific gravity, and that if no exit be afforded for such air no efficient ventilation can exist. The glass used in this, as in all the other houses, is 16 oz., bedded in putty and bradded down, but not puttied above; glazed in this way very little if any drip occurs.

In this house were Tea Roses planted out in the beds last July, in a soil consisting of the top spit of an old pasture, dung, and some lime rubbish. A few Roses—such as Solfaterre, Triomphe de Rennes, Cloth of Gold, Lamarque, and Gloire de Dijon, the latter of which had made before it was pruned a growth of 10 feet in length since it was planted, grew in the centre of the bed for the purpose of covering the roof. The beds here both in the centre and at the sides were surrounded by 4½-inch brickwork, coloured of a pale slate, which being of a subdued tone is found to harmonise better with the prevailing colours of the flowers than a glaring white. All the Roses were looking healthy, especially considering how recently they were planted. This house was very light and airy, and no artificial heat was afforded.

In the next house were some Cinerarias just coming into bloom, which will in another week present a gay appearance. Of the most forward were Smith's Brilliant, rich maroon; Othello, plum; and Flower of Spring, white, edged with rosy purple, very fine, large, good shape and habit, and a free flowerer. But far more noticeable here was a fine collection of Camellias on the stage in the centre, some of the most remarkable of which were Princesse Bacchiochi, mentioned in our last Number, page 471, as having been awarded a Special Certificate by the Floral Committee of the Royal Horticultural Society; Colvillii striata, about 3½ inches across, white pink striped; another kind unnamed, with a magnificent waxy white flower with occasional pink stripes, and 4 inches across; Eximia, blood red, very full and fine; Ochroleuca, one of the best of the cream whites; Imbricata, nearly 4 inches across, rosy pink; Marguerite Gouillon, rosy pink, streaked; Conspicua, very bold, and rather single, but the stamens very conspicuous, constituting a great part of the beauty of the flower, of free habit and fine foliage; Saccoi vera, imbricated, delicate pale rose; Teutonia, somewhat Ranunculus-shaped, the centre being much elevated, pink, with a wide white stripe down the centre of each petal; Donckelaarii, rather single, but very showy, and a free bloomer, crimson and white mottled; Chandeleri, scarcely out, but among the finest of its colour, a vivid scarlet; Saccoi nova, delicate rose, but not fully out; Alexina, blush, striped with rose, not new, but very free and good; Grunnelly, anemone-flowered, and which on account of the great size of the flowers would have a grand effect when planted out in a conservatory; Imbricata alba, pure white, with pink stripe; but among pure whites the old Double White and Fimbriata are still two of the best of their class. It is almost superfluous to add, that all the above were in perfect health, with beautiful glossy foliage.

Along the side shelves was a miscellaneous collection of winter and early spring-flowering plants, consisting of Heaths, such as hyemalis, Sindryana, Wilmoreana, Lambertiana, a good winter kind; Caffra, small, white, with pretty dark centre; Melanthera, lilac, dark centre; Mammosa, waxy rose; Grandinosa autumnalis, pretty white; Perspicua nana, rosy lilac; and Rubricalyx, white, rose calyx. Boweiana, white, and gracilis autumnalis, small but pretty, have been in bloom all the winter, and are still good. Among Epacrises, alba odorata, Atleana, Delicata, and Sanguinea, were very fine and conspicuous. The Bride, and Mrs. Pym, the latter the very purest, are first-rate whites. Cyclamens were just coming into bloom, and there were also some fine Chinese Primroses.

In the next house was a large stock of all the leading varieties of Roses, in first-rate condition, and promising to be shortly a mass of bloom. The most remarkable of these was H.P. Beauty of Waltham, with splendid cupped flowers of a bright rosy crimson. The plants of this could be distinguished at a glance, by their vigorous habit and large foliage, and in another week they will be clothed with bloom.

Among other first-rate Hybrid Perpetuals the following are particularly worthy of recommendation, viz.:—Abd-el-Kader, bright velvety purple, shaded with scarlet, large and very double; Admiral Nelson, perfect in outline, of a beautiful crimson; Alexandrine Belfroy, large and handsome, peach; Amiral Gravina, large and full, of a blackish-purple changing to amaranth; Anna Alexieff, large and full, rose coloured, a superb variety, of good habit; Anna de Diesbach, very large and showy, fine clear rose; Belle de Bourg-la-Reine, very fine, large and full, satiny rose; Baron Gonella, large and full, shaded pink and lilac; Catherine Guillot, perfect form, pink, very fine; Celine Touvais, large and full, fine form, brilliant glossy rose; Clement Marot, very double, rosy lilac; Comtesse de Chabrillant, beautifully cupped, pink, very sweet; Darzens, very large and double, rosy pink with yellowish centre; Dr. Briere, large and full, cherry; Dominique Daran, very double, dark crimson purple; Duc de Cazes, globular, blackish velvety purple; Empereur de Maroc, rich velvety maroon, very desirable; Eugène Appert, velvety crimson, fine foliage; Eugenie Lebrun, dark crimson; François Arago, velvety purple; General Washington, bright rosy red, particularly fine; Gloire de Santenay, scarlet crimson, very fine; Jean Bart, shaded red and violet, brilliant in colour, and very effective; Lœlia, shaded rose, very large; Louis XIV., beautiful blood red; Madame Boll, very handsome, rose colour, sometimes edged with white; Madame de Cambacères, rosy carmine, fine form; Madame Furtado, very fine and full, rosy crimson; Madame Pierson, large and showy, rosy pink; Mademoiselle Bonnaire, exquisite shape, white, sometimes rosy; Modèle de Perfection, lively pink, very pretty, and a free bloomer; Praire de Terre Noir, velvety purple, one of the best; Princesse Mathilde, shaded crimson and purple, very fine; Robert de Brie, rosy salmon; Rosine Parron, bright cerise, shaded; Senateur Vaisse, very double, bright red; Triomphe d'Alençon, very large, bright red; Triomphe d'Amiens, vivid crimson sometimes striped with lake, [illegible] fine and Victor [illegible] rosy carmine, purplish edges, [illegible] and effective.

Of the other classes (Bourbon) Victor Emmanuel, purple and purplish-maroon, was very good; Celine Forestier, a Tea-scented Noisette, was a pretty pale yellow; and La Boule d'Or, Tea-scented, a fine golden yellow.

Two other houses were filled with large Roses for the May and June exhibitions, those for the former being just started.

Roses for the late exhibitions, Azaleas, Rhododendrons, Kalmias, and Deutzias occupy three more large houses; and in the propagating department we noticed a large stock of variegated Geraniums of all the leading kinds. Among the Golden Chain varieties Mrs. Pollock with a bronzy red horseshoe was particularly fine; this, with Cloth of Gold, Lady Cottenham, and Golden Fleece may be considered the best of their class. We were here struck with a singular-looking plant being brought forward for propagation, and, on inquiring what it was, were told that it was a *Variegated Horseradish*. Of course it was not in a state to judge what it would be like when full grown, but Mr. Paul informed us that it was an accidental sport of the common Horseradish which he found in his grounds, and that its leaf is yellow edged with white, and having a patch of green as large as one's hand in the centre, the whole presenting a most striking appearance. Being like its original, perfectly hardy, it is likely to form a valuable addition to the limited class of hardy variegated plants, and will doubtless be extensively used for winter decoration.

Before quitting the propagating-pits it may be mentioned that the beds of these are heated by three-inch pipes passing all round beneath the border, through which, as well as in the walls on each side of the path, there are apertures by means of which the heated air can pass into the atmosphere of the pit. The supply of top heat can be regulated or entirely cut off by closing these. Near the propagating-pits is the tank from which the plants in the houses are supplied with water; passing through it is the chimney of the boiler-house fire which thus imparts to the water a temperature frequently as much as 20° higher than would otherwise be the case.

We now come to the magnificent collection of Hyacinths—a flower with which Mr. Paul has been very successful at the spring exhibitions of previous years, and with which he is no doubt preparing to achieve fresh honours. The bloom is now in splendid condition and will continue in perfection throughout the month, during which time it will form quite a study for those who take an interest in this lovely harbinger of spring. For the benefit of our readers we noted down a few of the newest and finest sorts, a task—and we frankly confess it—of no little difficulty in consequence of the care with which the stock had been selected to the exclusion of all kinds of inferior merit.

The most remarkable in the several classes were *Double Reds.*—Koh-i-Noor, salmon red, new and very fine; Lord Wellington, pale rose, with handsome spikes and splendid bells; Noble par Merite, blush rose with dark centre, new, and very fine; and Susannah Maria, bright rose, very handsome spike. *Double White.*—La Tour d'Auvergne, pure white, one of the best; Prince of Waterloo, pure white, also very fine. *Double Blue.*—Prince of Saxe Weimar, dark blue, long and handsome spikes, not new, but very good; Van Speyk, fine lilac blue, very handsome. *Single Reds*, Amy, fine bright red; Aurora Rutilans, fine dark red; Cosmos, fine rosy pink; Duchess of Richmond, rich pink, fine spike; Gigantea, new, blush pink, with very close spike; Florence Nightingale, pale pink, with carmine stripes, large bells and splendid spike, quite new; L'Etincellante, bright crimson; Lina, bright crimson, new and good; Lord Wellington, rose, striped with carmine; Milton, shaded crimson, very fine; Mrs. Beecher Stowe, large and beautiful, pink bells, new and fine; Mr. Macaulay, rose, beautiful; Norma, splendid bells of a delicate waxy pink, very fine; Sultan's Favourite, large and handsome, blush striped with rose; Solfaterre, fine orange scarlet; Von Schiller, salmon pink, large spike, new, and one of the finest. *Single Lilac.*—Honneur d'Overeen, mauve, very fine. *Single White.*—Alba Maxima, splendid pure white bells, a new sort; Grandeur à Merveille, large pale blush; Grande Vidette, pure white, very handsome; Madame Van der Hoop, very fine pure white; Mont Blanc, pure white. *Single Blue.*—Argus, bright blue, white eye, very fine and distinct; Baron Von Tuyll, dark blue, particularly fine; Charles Dickens, a sort that always comes good, shaded porcelain; Couronne de Celle, azure blue, large and very close; Grand Lilas, porcelain, handsome spike; Orondatus, porcelain blue, very good; Regulus, light blue; and William I., purplish-black, very fine spike. *Single Black.*—General Havelock, new and [illegible] handsome, and Prince

Albert are two of the best. *Single Yellow.*—Ida, very fine bright yellow.

For soil Mr. Paul recommends turfy loam, with a plentiful admixture of sand and well-decayed manure; but for plants in borders any light garden soil will do. Success in the cultivation of this plant depends in a great measure on the time of planting, and the manner in which that operation is carried out. If the bulbs are intended to be grown in beds, October or November is the time, the crowns being placed 2 inches below the surface, and further covered with a like depth of loose pulverised manure as a protection against frost. For pot culture the bulk of the roots should be potted in October, using pots much deeper and more upright in the sides than the common kind, but for early and late flowering a quantity may be potted in September and December.

In potting leave one-third of the bulb above ground, place the pots out of doors on a hard, dry bottom, cover with 6 inches of coarse sand, allow them to remain covered for a month at least, then take into a cold frame or forcing-house; keep near the glass when the leaves expand, and give plenty of air and water.

The shades of evening having now commenced to gather round us, we were reluctantly obliged to wend our way towards the railway station, without visiting the other portions of Mr. Paul's grounds, amounting to twenty acres more. But in passing along we had just time to peep into four large pits covered with a kind of tiffany, and filled with hardy plants which require a little protection when young—such as Hollyhooks, Roses, and young Conifers. Among others were some fine plants of Cupressus Lawsoniana, one of the noblest and most graceful of its race. Pits of this kind we were told could be constructed at a very trifling expense, and were found extremely useful in winter and spring for protection from frost, and in summer for protection from sun.

DOUBLE CYCLAMENS—COCOA-NUT FIBRE REFUSE—CROCUS LAGENÆFLORUS.

The following short extract will interest you; it is from "The Dutch Gardener" by Van Oosten, London, 1703:—Speaking of "the Sowbreads" he says, "Of these there are several sorts—there is a double white one which bloometh in the spring, and is much esteemed, and it is said to have been brought from China; yet I believe it got from seed." I suspect he is speaking of the Cyclamen persicum; but it is interesting as confirming our old friend Gilbert's statement of the existence of the double sorts—a fact that our present gardeners deny. It is rather an interesting little book and has some good ideas. He gives directions for growing dwarf pyramid Apples and Pears, the one on paradise, the other on Quinces. This will interest Mr. Rivers, and I will send him a note of it.

I have to-day seen your article on Cyclamens, and have learnt much about them that I never knew before. Clearly I have never had true vernum, so that if you are ever able to bestow a genuine seedling on me it would be most acceptable. Maund in "The Botanic Garden," vol. vii., has a plate of C. vernum which is altogether wrong; but in vol. viii., No. 708, he gives a drawing of one sent to him by my father (a capital gardener). He calls it europæum, and it flowers in August; but it has a very peculiar root (anemone radice), with short spurs upon it. Might not this be one of the parents you are seeking for vernum?

I think you and the writer in page 484 on cocoa-nut refuse are both under a slight mistake. I get mine from Bristol, and yet you have seen it and recognised it as the genuine article. I saw it produced from the crushing or tearing machine preparatory to making mats and brushes, and so is not the refuse from their manufacture, though I have no doubt the manufacturers use but one rubbish-heap for all the processes, so that there is a slight mixture of fibre with the sawdust. I first saw it used in the yard of a horse-auction, making a beautiful footing for the horses to exercise on. I at once saw it was too good for that purpose, and then came your notice of its uses.

I have two beauties now out, one is Crocus lagenæflorus. I got it lately from my father in Devonshire. He long ago made an accurate study of the Crocus and Narcissus families, and had a fine collection. This Crocus is a glorious deep orange yellow, and would be most valuable to those who grow shaded ribbons, as it would shade off with the common yellow and the Cloth of Gold; and they are all three out together. My other beauty is a pale lilac Anemone, rather larger than our Wood Anemone, and of a very lovely colour (the colour of Lactuca sonchifolia, an uncommon colour). A friend sent me roots last year from the neighbourhood of Mentone. If I get any more good flowers I shall send one to your office to get its right name. The Crocus is figured in Salisbury's "Paradisus Londinensis."—H. N. E.

TRACING OUTLINES.

The French receipt for tracing outlines, asked for by your correspondent in No. 48 of your Journal, may be found in the supplement to the *London Review* of November 23rd, and is as follows:—

"Fix the paper on which the copy is to be made on the original, and moisten it with a cotton tuft dipped in the purest benzoin. The portions of the paper which have imbibed the liquid are at once rendered as transparent as prepared tracing-paper, and the original can be copied without the slightest injury to the drawing. Inks run freely without spreading, and the lines are more difficult to remove from the paper thus prepared than from common paper; lead-pencil marks being almost indelible. As the benzoin evaporates the paper becomes opaque, assuming its primitive appearance. If the liquid be pure and fresh distilled a little exposure to a current of air will remove all smell. If the drawing be large benzoin can be used as the work proceeds, and if any portions become opaque, apply more benzoin to that part."—A Suffolk Subscriber.

THE FLORIST AND POMOLOGIST.

This monthly publication, which commenced with the present year, is a new and enlarged series of the "Florist," which work the "Florist and Pomologist" has incorporated with it, and describes itself as a pictorial monthly magazine of flowers, fruits, and general horticulture, and is conducted by Dr. Hogg and Messrs. Spencer and Moore—names which are ample guarantees for efficient and respectable management.

The size of the work is considerably larger than the "Florist," and, consequently, more suitable for a more perfect illustration of the various subjects with which it is adorned. The drawings which have appeared in the three Numbers issued deserve all praise, and are executed in the highest style by that renowned artist Mr. Fitch.

The January Number was illustrated with drawings of Sunset Geranium by Mr. Fitch, and Northern Spy Apple by Mr. Andrews, but the latter weak and incorrect in the drawing as regards the foliage. The letterpress comprised, besides copious notices of the subjects illustrated, articles on the Trebbiano Grape, by Mr. Tillery, Welbeck; the Chrysanthemum, by Mr. Holmes; the Pine Apple, by Mr. Thomson, Archerfield; the Rose, by Mr. Radclyffe; and several other articles and notices of gardens and nurseries, and copious calendarial directions for the month.

The February Number was illustrated with very clever drawings of Early York Peach and Bougainvillæa glabra, and contained some very interesting and excellent practical papers. Among which were remarks on the local influences of soil and climate on a good many varieties of Pears, by Mr. Ingram, Belvoir; a very instructive paper on winter-ripened Grapes, by Mr. Thomson, Dalkeith; notes on some winter-flowering plants, by Mr. Henderson, Trentham; on French Pansies, by Mr. Deans, Bradford; on the Fig, by Mr. Barnes.

The March issue had drawings of a splendid group of new Chrysanthemums, admirably drawn by Mr. Fitch, with a list of new and fine varieties; and articles on ornamental-foliaged plants for grouping on lawns, by Mr. Fleming, Cleveden; on renewing Vine-borders without losing a crop of Grapes, by Mr. Melville, Dalmeny Park; and several other practical papers.

The proprietors have expressed their desire to bring out a work worthy of the age, and the goodly array of names which have already given and promised their assistance, in conjunction with artists of first-rate reputation, cannot fail to lead to the realisation of their unbounded success. The articles which have already appeared in the pages of the "Florist and Pomologist" have been thoroughly practical, sound, brief, and to the point; and to all who are interested in all that is going on in the improvement of varieties of fruits and flowers this work cannot fail to prove of great interest and value.

FLORISTS' FLOWERS.

THEIR DISTINGUISHING CHARACTERISTICS, CULTIVATION AND VARIETIES.—No. 3.

THE PELARGONIUM.

If flowers could weep and know their losses, surely there is not one that would wear a deeper crape, or shed more bitter tears, than the subject of this present notice. It was only the other day that I recorded the death of one of its earliest patrons—the Rev. Richard Garth, of Farnham; and now, this morning, when I was cogitating over this paper, I received a note from my friend, Mr. Charles Turner, of Slough, informing me of the death of one whom I then spoke of as having commenced with him in the race, who carried it on much longer, and who, with the aid of his intelligent gardener, Mr. Nye, was the most successful amateur exhibitor of Pelargoniums—I mean Mr. Foster, of Clewer Manor, near Windsor. How striking sometimes are the coincidences of God's providential dealings, and what solemn strokes of the clock of time these are! Within a couple of months of one another these two giants of Pelargonium culture depart; and but a short twelvemonth ago, the genial and kind-hearted Edward Beck was called away! Surely I said rightly, the Pelargonium ought indeed to weep for its losses; and we, the younger, and yet the elder generation of florists, who have been so often delighted with their productions and who can tell those commencing the delightful pursuit what changes these men made, are yet a while longer left. Mr. Foster was not merely a Pelargonium-grower and raiser. He was a liberal encourager of horticulture generally, and not very long since I saw him, then a hale old gentleman, in the Slough Nursery making his purchases of new things—Conifers, if I recollect rightly. May his mantle fall on one worthy to bear it!

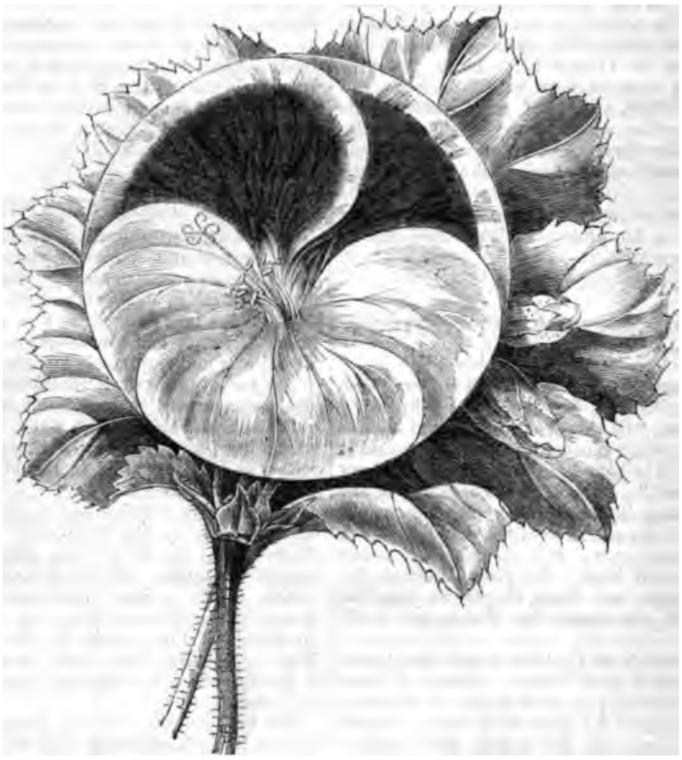


Diagram of a Perfect Pelargonium.

And, in truth, when one looks back on those days, and recollects the (what we should now call) Ragged Jacks which were then tolerated, and which their raisers assured us never would or could be beaten, one wonders at what we must call the audacity of Mr. Glenny, who ventured to draw the above representation of what a flower ought to be, and then told florists to work away until they obtained it. Well might they hold up their hands in astonishment, and ridicule the notion. But if it were audacity, it was the audacity of genius; and we have now in many of our best flowers, such as Mrs. Hoyle and Celeste, as great symmetry as is probably attainable. A Pelargonium ought to be quite circular, and to consist, of course, of but five petals. The ground colour in all to be of the same shade, and in the lower petals clear and bright. The upper petals should have the blotch dense and well defined, and a narrow edge of ground colour round the upper rim. The throat should be clear and free from stains; when pure white it is generally preferred. Spots on the lower petals have now brought us another class of flowers, while Fancies and French varieties make also additional ones. The present notice refers only to those known as show or florists' varieties. Some kinds are apt to burn, this is a fatal defect From some cause (perhaps the flimsiness of the petals), the sun seems to scorch the upper petals at the edge of the dark blotch, and so [illegible] discoloured and dingy appearance. This happens generally with the darkest-coloured flowers; but now when we have so many good sorts of every shade of colour, it is certainly not to be tolerated. Stoutness of petal is also another property, which is second only to that of form, which I regard (despite Dr. Horner in the "Gossip for the Garden"), as still the very first requisite in every florists' flower, and it is quite evident, that when the petals are thin the flower is not likely to retain for any length of time its symmetrical appearance.

The character of the plant, too, must be taken into consideration. Loose and straggling growth may for a while be overlooked, but must ultimately condemn a flower. Thus, Wonderful, still a desired variety, would be much more so were it not for its long-legged habit, which makes it easily recognisable on a stage. With this must be coupled freeness of bloom. If a plant only threw up a few trusses, or if those trusses consist of only a few pips, then the flower will not long last as a favourite. The French varieties generally are more free-blooming than the English ones; and the gentleman who is styled the Sardinian correspondent of Messrs. Barr & Sugden (though now, as he lives at Nice, he is in reality a subject of the French Emperor), assured me that his seedlings were exceedingly free in their blooming. I dare say some people will say, when they look at the figure, "Oh, we never see such flowers as that!" Pardon me, you do, or may do. The same gentleman showed me some dried blooms, most exquisitely prepared they are, which were perfectly circular, and this is the true way of judging of them.*

The cultivation of the Pelargonium has been so often and so ably touched upon in the pages of THE JOURNAL OF HORTICULTURE, that it may seem superfluous to add anything further; but a few remarks, more for the general cultivator than for the large grower or exhibitor, may not be out of place; for although it is one of those flowers which will bear any treatment almost, it amply repays a little care and attention. It delights in a rich and strong compost: one composed of two-thirds good turfy loam and one-third well-decomposed cowdung will make a very good one. Leaf mould is used by some, but I think that it makes the soil too porous. Supposing your cuttings to be rooted (and they will strike anywhere—in a propagating-house, in a spent hotbed, or in the broad glare of sunlight and heat in the open border), they should be potted off in September into small pots, and there left until they have filled them with roots, then give them a shift into those in which you intend them to bloom. Six inches across will be large enough for maiden plants. This should not be done if possible later than the end of October or beginning of November, and by Christmas they ought to have filled the pots with roots. The young shoots should be pinched back so as to encourage a short stubby growth. All the work they do in the spring should show itself above. The rootwork should all be finished. To insure their doing this properly, they should be supplied with liquid manure, either in the shape of guano water or some other form.

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* These are now to be seen, I believe, at Messrs. Barr & Sugden's.

When coming into bloom they should be shaded, and care must have been taken all through their growth to fumigate well against green fly, one of the greatest pests to which they are subject. When the bloom is over, water should be withheld from them gradually, so as to allow the wood to ripen, and this ought to be thoroughly the case before they are cut down. They should then be kept close and without water until they break. When the shoots are about an inch long they should be potted into smaller pots, and when these have been well filled with roots, again into the large ones for blooming. A little practice will soon enable a cultivator to grow them to his own satisfaction, even although the exhibitor and large grower may consider him but a "muff" after all.

As to varieties, their name is legion; I select a few I know to be good:—

Celeste (Hoyle), rich orange lower petals, dark maroon top, and orange scarlet margin, clear white centre.

Mrs. Hoyle (Hoyle), violet rose lower petals, small black spot on upper ones, shaded with red. Large.

Prunella (Hoyle), dark, rich, black top petals, narrow margin of bright crimson, white centre, lower petals prettily painted.

Ariel (Fellowes), white, of fine shape and substance, dark carmine spot on top petals.

Carlos (Hoyle), an old but fine-shaped rose-coloured flower.

Czar (Hoyle), a large and striking painted flower.

Desdemona (Fellowes), an excellent and useful white.

Fairest of the Fair (Beale), white with long pink blotch. Very pretty.

Governor-General, an old but very favourite flower.

Lord Clyde (Foster), bright scarlet, good shape. A very fine loomer.

Norma (Hoyle), deep rose lower petals, maroon top. A large and fine flower.

Rosa Bonheur (Hoyle), very clear white throat, deep lake lower petals, richly tinted with carmine and black. Free, fine, and striking.

Volunteer (Hoyle), centre and edges of lower petals white, richly painted with waxy orange carmine. A fine and showy flower.

There are a great many others as fine, and, perhaps, finer varieties, but these have struck me as being very good, and, I should think, would please most people.—D., *Deal.*

A FEW DAYS IN IRELAND.—No. 17.

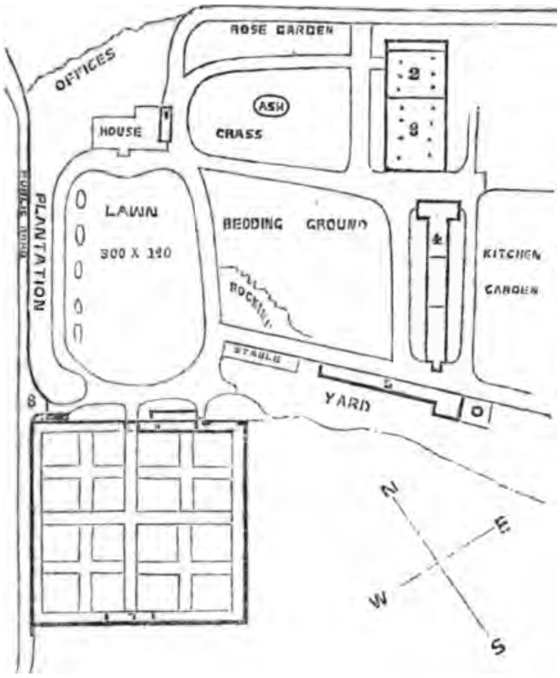
(*Continued from page* 481.)

ROCKVILLE, BLACKROCK, DUBLIN.

Reaching Dublin by the last train from Kells, and getting recruited at the "Verdun" where the chief substantial articles of the commissariat are supplied from the farm and the large garden of the worthy landlord, who kindly gave us much useful information as to places, &c., we spent the following day at Blackrock and its neighbourhood; which, situated on the south of the Liffey, and east of Dublin, and thus between it and the harbour at Kingston, is fast becoming to the metropolis, with its squares, and crescents, and villas, what Belgravia and Paddington are to London—with this marked distinction in its favour, that gardening forms as characteristic a feature in its villas as we should expect to find at Dulwich or Norwood. Besides merely glancing at some gardens, and passing through the most of a large nursery near Nuttley without seeing any one whatever, we walked through five gardens in the usual way, and were prevented seeing more owing to darkness coming on. In each of these visited we found much that was interesting, though that interest was less associated with the extent of the demesnes than with the different modes employed under different circumstances to make the most of them in a useful or decorative point of view.

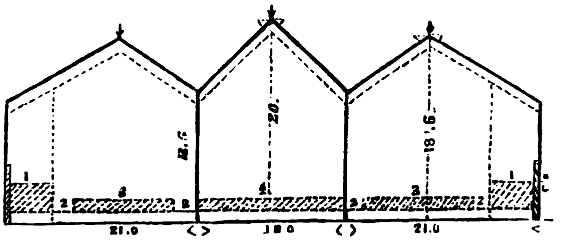
The first of these we visited was Rockville, the charming residence of Thomas Bewley, Esq., who, by his wealth, his liberality, his scientific knowledge of gardening and botany, and his admiration for all that is beautiful, and perhaps more especially for all that is rare and attractive in exotic and tropical vegetable loveliness, combined with the advantage of having such a servant as Mr. John O'Brien, who, to a hearty enthusiasm and a next-to-encyclopædia knowledge of plants, unites great practical experience and cultural skill, has thus made Rockville a place illustrious in the three kingdoms, and brought to it by its fame visitors from the continent of Europe and from among our cousins across the Atlantic. What is perhaps of more importance still, Mr. Bewley, by the force of his example, has given an impetus to the encouraging of the higher departments of gardening by the gentry of Ireland, and of England too; and shown conclusively that the interest of a place is less dependant on its extent than on the goodness of the management, the peculiar features, and its distinguishing characteristics.

Fig. 1.



1, Conservatory.
2, Fern-house and potting-shed at back.
3, Fruit-house.
4, Orchid-house 138 by 19 feet, potting-house at end.
5, Propagating-pit, &c., in yard.
o, Boiler and house, heating pits and Orchid-house.
6, Vinery and potting-shed behind.
7, Cold house, north aspect.
8, Entrance and gardener's house.

Fig. 2.



The dotted lines at the outside of the woodcut mark the ground level.

The heavy lines represent the section of the Fern-house; the dotted lines within these that of the fruit-house, the floor or bed of which is 2 feet below the ground level, its side-borders being level with the ground outside, and 2 feet above the paths.

The Fern-house is 1 foot 6 inches below the level of the fruit-house, the ground falling to the northward.

1, Side-borders 4 feet wide. 2, 2, Paths. 3, Fruit-bed. 4, Boxes planted with Peaches and Nectarines.

On entering the lodge at the south-west corner you perceive before you an open lawn, some 300 feet from north to south, and 140 feet from west to east. A plantation skirts the boundary wall, outside of which is the public road. A drive goes round this lawn, terminating at the mansion, which stands at its north end. Behind you south of this lawn is a square kitchen garden containing about an acre and walled all round, the wall fronting the lawn being here skirted with shrubs. On the south side of this wall there is an excellent vinery, and on the north side of the south wall a cool house of large size for Rhododendrons, keeping soft-wooded plants, retarding plants, and keeping them longer when in bloom. As we do not mean to return to this interesting garden again, we will just mention that the fruit trees and cropping were in excellent order. East of the south side of this lawn is the stable-yard; the stables and glass houses beyond being bounded by a wall on the north side. Northward of this is another lawn of about the same size as the first, separated from it by the carriage way, and itself divided into unequal parts, and extending north of the mansion. On the east side of this are situated the large fernery, orchard-house, tropical Orchid-house, and small Fern-houses, making the long leg of the letter L, and the houses already referred to the short leg of the letter reversed, ⅃. That part of the wall where the short leg begins is backed by a mass of rootery and rockwork.

The mansion has two things in a gardening point of view worthy of notice. The first is a glass case of Killarney Fern placed on a table close to the window of a parlour looking to the west; the glass of the window is muffed and flowered elegantly of a white colour, so as to give the requisite amount of shade. The case is 30 inches long, 24 inches deep, and 18 inches wide, and is entirely of glass with the exception of the bottom box, which is about 6 inches deep. The plants looked vigorous and healthy, and were such an ornament as many would greatly prize. As far as we recollect they were thus treated: A layer of the smallest thumb-pots had been placed, bottom upwards, along the bottom of the box; these were covered with a layer of fibry lumpy peat. Over these a layer of peat and moss, in which the roots were planted and covered with moss; then a thorough good watering and time given to drain and settle. Since then they can hardly be said to have been watered; but on moving the glass top moisture is secured by frequent sprinkling and dewing over the surface, which will greatly resemble the dashing of spray and misty vapour from the fall of a stream. A neat finished appearance is given by a row of clean-washed pebbles all round on the top of the moss.

The second thing is a fine curvilinear conservatory or greenhouse, on the east side of the mansion, communicating with one of the principal rooms and provided with a spacious walk with platforms on each side. This house was very gay with Vallotas, Amaryllis of the Hippeastrum breed, Geraniums, Balsams, Salvias, Oranges, Fuchsias, &c., diversified with the foliage of Ferns and other fine-leaved plants, presenting on the whole a most effective appearance.

On the lawn that here separates the mansion from the fernery and other span-roofed houses, is a fine Weeping Ash, with a circle of gravel beneath it, and underneath that a layer of tar, so that the gravel shall not only be clean and firm but dry for the feet of those who may choose to sit and study in such an arbour. Of course, there is no doubt that the roots of the tree extend far beyond this circle of gravel, as not a drop of rain will penetrate directly through the tar. We found the walks round the lawn were done the same way, and thus not only would a clean and dry but a firm surface be presented to the feet, though using the same shingle gravel that is so loose in other places before it is well worn down. The tar, of course, will never be seen in such a finished place; the nicety of management consists in having enough to keep the surface firm, and yet so covered as to conceal the firming agency. Mr. O'Brien considers, like your humble servant, the boiling and heating of the tar labour thrown away.

The lawn south of this speaks of openness and freedom, there being only one or two clumps of a good size in the centre, and fair-sized ones a good distance apart round the sides. Each clump was planted with rings of colour, and each, therefore, perfect in itself, as well as contrasting favourably with its neighbours. The very openness is pleasing in any case, but it must be doubly so here, as affording a relief alike to the eye and the mind when next to weighed down and distracted with such a concentration of objects of interest inside the plant-houses. By the sides of these houses are borders separated by a walk from the lawn and partly ribboned. That against the large fernery and orchard-house was thus planted, beginning at the Box, in rows:—1st, Lobelia speciosa; 2nd, Variegated Alyssum; 3rd, Yellow Calceolaria; 4th, Scarlet Geraniums; 5th, Heliotrope, and a line of Laurustinus and standard Roses at regular distances. As the front or side glass of the orchard-house comes to the ground, the use of the Laurustinus, &c., is to carry the eye from the windows of the mansion or the lawn above the height of the pots inside. The border by the side of the Orchid stove-house, which is of brick and glass and not so high, 135 feet in length, is in rows of blue, white, and red, with a row of mixed dwarfish Phloxes at the back, and plants of Cotoneaster microphylla to cover the wall. On the other or east side of this [illegible] house and concealed by it from the windows [illegible] a the reserve ground containing low pits and frames, and beds and standing ground for Chrysanthemums, Roses in pots, Lilies, Salvias, &c. Close to the rootery and a shaded wall on the south side of the lawn, were a great number of British, Irish, and hardy Ferns, which, no doubt, would soon get a proper home.

From this corner we shall take the houses eastward and northward as they come, merely premising all we can pretend to do, or feel qualified to do, is merely to give a glance at some of the more salient points connected with such a gorgeous collection of plants.

The first house, then, in front of this south boundary-wall to the lawn is 80 feet long, 15 feet wide, and 9 feet in height, and is divided into three or four separate compartments, with a convenient walk down the middle, and supplied amply with bottom and top heat, hotbeds, hand-lights, glass-covered boxes, with tops moveable and tops hinged, and almost every plan that could be thought of for growing and propagating all kinds of tropical plants in the greatest perfection. Such houses would be just suitable for early Vines in pots, or planted out of them, or for early and late Cucumbers and Melons; and we understood they are sometimes used for such purposes, though on our visit they were chiefly employed in propagating new and rare plants, and giving health and vigour to large importations of Orchids. Here, for instance, were the finer Lycopods being multiplied by hundreds, and Pteris tricolor coming up as thick as the hairs used to be on our head; and there nice plants of the pretty Lycopodium Wallichii and jamaciense imported from Ceylon, and which last has the singular property of becoming almost white at night. Here is a department almost filled with fresh-potted little seedlings of the West Indian Palms. There a collection of the sweet rich-coloured Anœctochilus, including the rare Maulii, lattice plants, the pretty small Burlingtonia decora, Miltonia spectabilis, and along with Phalænopsis amabilis, grandiflora, rosea, &c., the beautiful Schilleriana with the foliage blotched with white stripes and dots.

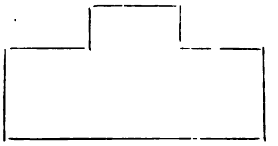
Then, again, as fresh importations, we found great masses of Cattleya Mossiæ, crispa, amethystina, Leopoldii, &c.; Saccolabium Blumei, Readii, &c.; the pretty Ionopsis, producing its lilac flowers; Vandas, of sorts, as violacea, gigantea, &c.; good plants of Dendrobium Heyneanum, and great masses of Epidendrums, Oncidiums, Dendrobiums, &c., fastened to the wood on which they were found growing, or fixed to pieces and blocks of the Calabash tree, which Mr. O'Brien thinks the very best for aërial Orchids, and we presume, also, for fixing across pots, to keep others elevated that are not depending on the moisture of the atmosphere almost entirely.

To give an idea of these importations, Mr. O'Brien counted a few separate plants, such as 20 of Epidendrum bicornutum, 50 of Saccolabium Blumei major; 120 of Oncidium Lanceanum, 150 of the scarce Paphinia cristata (Maxillaria cristata), in two varieties, which we were informed was very shy either of the syringe or bright sunlight, and 200 of the Oncidium papilio many of which were producing their butterfly flowers, though but two months imported.

Farther eastward on the same wall is a very neat greenhouse, with a double-span or ridge-and-furrow roof, the glass ends of the spans only being seen from the lawn, which would just be the thing for many amateurs, and by a similar plan any space may be enclosed without having a high roof. This neat affair is 30 feet long, 20 feet wide, 11 feet high at the apex of the span, and brick walls ends and sides 5 feet in height. Ventilation in abundance is given by glazed shutters in the ends of the spans, and by openings in the side walls. The roof is thus all fixed, and the sash-bars are neatly formed of iron, and screwed to the ridge and wall plates, which gives a much lighter appearance than wood would have done. The roof is of Hartley's Patent. The internal arrangements for the plants are exceedingly simple and neat:—A broad level platform all round, about 3 feet or more from the ground, and a walk of 3 feet or so between that and the centre platform or table which is from 7 feet to 8 feet wide. These platforms are supported by neat cast-iron columns, and are themselves formed of pine wood well pitched, and then covered with a layer of fine-washed sea gravel for the plants to stand upon. The floor beneath the platforms is also thus covered, though but little is seen of it, as a wide board fastened on the sides not only gives a shallow rim as it were to the beds, but the lower part being scolloped or sweeped into elliptic curves, and then painted dark green with golden bands of colour gives to the whole a very tasty, finished appearance. The house was filled with some of the finer Azaleas, Pimeleas, Epacrises, &c., of which we can only say they did no discredit to the neat house. Of a few softwooded things we noticed Streptocarpus biflora, Tydæa lopidum, a fine dark purple, and a seedling Gesnera, a cross between splendens and cinnabarina, with fine handsome marked foliage, and a strong branching spike of brilliant flowers, with wide open throats, showing the inside dotted with beautiful spots.

Having thus passed the short reversed leg of the L, we turn northwards, taking the various houses on our way. In the range of opaque buildings already referred to, though not quite sure of their position, are two small houses, 16 feet long, 7 feet wide, and 7 feet in height. On entering the first, but for the windows of coloured glass you might take it to be a dark moist cave of tupha and conglomerate, and filled chiefly with the Clare or Andrewsii variety of the Trichomanes radicans, growing and flourishing nicely. The other house is about the same size, and finished in the more ordinary rockwork style, and planted with the true Killarney Fern, Trichomanes radicans. The light to this house is furnished by a skylight in the end of the roof facing the north, by which also the necessary air is given.

We now come to the large Orchid and tropical stove-house, which is 135 feet long, 19½ feet wide, 14 feet in height to the apex of the span, and 4½ feet in height at the sides. The ventilation at the sides is chiefly given by openings in the wall furnished with caps or slides, the air admitted thus being brought into contact with the heated pipes before being diffused among the plants. The air at the top is given by openings between a double ridge-board; the ventilating-board being fixed in a groove on each side, and pulled along by a rope and pulley, much on the same principle as the ventilating-board in the new houses of Mr. Nivens at Drumcondra. The internal arrangements are a broad shelf along the sides and a platform in the centre, consisting of a broad shelf on each side and a raised one in the centre. These shelves and platforms are supported at the sides by neat iron columns; and the platforms are, whether wood or stout slate, covered with clean-washed small sea-shingle. This house is divided into three compartments, besides the entrance corridor of 9 feet by 8 feet by 7 feet, which has a case of Killarney Fern on one side and a similar case of Andrewsii on the other, and a large book in which the names of visitors are enrolled. The first division is 40 feet, the second 30 feet, and the third 60 feet in length. The first division is chiefly devoted to the hardier and South American Orchids, and to others when in bloom. All seemed in the highest possible health. Of these in bloom we noticed a noble plant of Odontoglossum grande, with about forty expanded flowers, and a good specimen of rostratum. Also in bloom were fine plants of various Phalænopses; Lælia elegans; Paphinia cristata, two varieties; Oncidium Lanceanum, papilio, and several others; Ærides suavissimum; Cypripedium Fairrieanum, with fine striped foliage, and caudatum, Lowii, &c.; Zygopetalums, &c.; also fine-flowering plants of the white Eucharis amazonica. The house was also rendered attractive with masses of Cattleyas, Oncidiums, &c., suspended masses of Dendrobes, Ærides, Stanhopeas, &c.; and the platforms gay with a great variety of the fine-leaved Begonias, Caladiums, including Bellymanii, mixed with the finer-fronded Ferns, as Gleichenia dichotoma and various Adiantums, &c. Not the least charm, however, was the roof. Over the whole, on longitudinal wires about a foot apart, were trained alternately the beautiful crimson Passiflora kermesina, and the rich blue lilac Passiflora quadrangularis, or the Granadilla. These would make a beautiful contrast, and were thin enough to allow of plenty of light. There was not much contrast in the flowers on our visit, as there were few flowers on the Granadilla, but such a mass of fruit we never witnessed before. They were set as regularly along the wires as if a rule and compasses had been used for them. We presume considerable care must have been taken to fertilise them. If good nourishment were given to the plant, the worthy owner would have it in his power to give a treat to those lovers of the good things who look upon a Melon as not fit to be compared with the Granadilla.



The second division is devoted to East Indian Orchids, and those requiring a high temperature. Here in flower we noticed the Ionopsis paniculata, the chaste Calanthe vestita, several Phalænopses, a noble plant of Uropedium Lindenii, also fine masses, though not in bloom, of the Peristeria elata, Cattleya amethystina, Leopoldii, &c., Ærides crispum, Warnerii, &c., Saccolabiums, as Readii, &c., with large masses of Denbrobes, Oncidiums, Epidendrums, Barkerias, Lælias, &c., depending from the roof in baskets, or fastened to the Calabash tree. Here, also, we noticed some nice plants of the old but bright scarlet Musa coccinea opening its blooms, and a noble plant of Musa Cavendishii, planted eight months from the sucker, and now having leaves 66 inches in length, and 31 inches in width, the height of the plant being 8 feet. Interesting and striking as all these and many more are, there is one feature still that for gorgeous and picturesque effect throws them all into the shade. On opening the door to this compartment, but for the firm path beneath your feet, and a peep at the glass here and there, you might imagine that by the magic spell of an enchanter you had been carried in a mesmeric sleep over continent and ocean, only to open your eyes to gaze upon a forest tropical scene, unequalled for wild luxuriant loveliness and beauty. This is all due to the Cissus discolor being trained along the roof, not in stiff lines and bands, but allowed to depend in long streaming shoots all over the house, wherever room could be found for them. This regulated wild grandeur not only gave the house a natural appearance contrasting with the greater degree of trimness in the compartments on each side of it, but from good nourishment and a proper amount of light, the leaves were not only of good size but exceedingly rich in their shaded marbled colourings. We presume the plants will be considerably cut back or thinned in winter, or rather in autumn, to give more light, but we forgot to make inquiries on that subject. However, there is no doubt that it will stand the knife freely, and produce plenty of fresh shoots, though pretty freely spurred back.

The third compartment is the largest, and besides noble specimens of Orchids, has a fine collection of good-foliaged plants, Ferns, and Mosses. The roof, as in the first compartment, is supplied with longitudinal wires, and on these were strong shoots of the grand old climber Impomæa Horsfalliæ producing masses of crimson flowers. We forget whether Allamandas were at all trained to the wires; but if not, several plants presented not only a fine contrast in colour to the Ipomæa, but the trimness of the latter was softened down by the somewhat natural dangling and festooning of the former. Among singular and fine-foliaged plants we noticed good specimens of varieties of the Pitcher-plants; a splendid specimen of the Theophrasta imperialis, well named imperial, and worthy of commemorating the great botanist of antiquity; a noble plant of Cyanophyllum magnificum, with its magnificent foliage; large beautiful plants of Croton pictum, and others; Dracænas, of various kinds; the new Coleus Verschaffelti; a rich assortment of Caladiums, containing almost every variety out, including pectinatum, with its rich veins in the centre, and many with foliage as large as luxuriant Cauliflowers; and among Alocasias, the pretty Alocasia variegata, and the bronzy purple metal-leaved Alocasia metallica, supposed to be the best plant in the three kingdoms.

Among Ferns we noticed some fine plants of the singular Platyceriums, as grande, stemmaria, biforme, &c., clinging to blocks or masses of tufa; noble plants of the Adiantums, as trapeziforme, macrophyllum, triangulare, tenerum, brasiliense, and many others. Among twining and flaunting Lycopodiums was the new L. polystichum. Of Gymnogrammas, beginning with chrysophylla, there were fine plants of all the best kinds; but, perhaps, as conspicuous as any were fine plants of Davallia aculeata, some 4 feet in diameter, and as much in height, with fine prickly fronds; and equally fine, noble plants of Thyrsopteris elegans, and Drynaria coronaria; whilst by way of contrast, in sheltered nooks we find such beauties as Trichomanes anceps, exsictum, floribundum, rigidum, elegans, &c., and such Hymenophyllums as scabrum and ciliatum; whilst clinging to a piece of mossy conglomerate is the interesting Arthrobotrys articulata, producing its fronds only on one side of the stem, and looking to the passer-by as much like a Moss as a Fern.

Then as to Mosses or Lycopods it would be endless to enumerate them. From being out of practice there were many we had never before seen, or even heard of. The newer kinds would soon be fine plants, and all the older varieties were from 24 inches to 30 inches, and 36 inches across, and covering and concealing the pans and boxes with their rich verdure. In walking along noble specimens caught our eye of Warczewiczii, rubricaule, Wallichii, jamaciense, inequalifolium, Lobbii. The two latter some 3 feet in diameter, and more in height. A descriptive list of Lycopoda, with synonymes up to the present time, would be very interesting to those who love them, though they have no chance of growing them.

Near the north end of this compartment is a basin or fountain; the centre stalk being graced with Ferns and Mosses, Æschynanthus in baskets, and drooping Ferns, as the beautiful Goniophlebium Pluswardii, had fronds from the roof reaching almost to the ground. The north end of this division is a solid wall, and in front of it there was a wall built of sods of heath mould, &c., over which were creeping pieces of Cissus discolor and other trailers; whilst many little Ferns were growing and seeding themselves freely. A part of the opaque roof was getting covered with Ficus stipulacea clinging firmly to it. In the turf wall itself many vaults and crannies, caves and recesses were formed, where the finer Trichomanes and Hymenophyllums already mentioned were finding suitable homes; and in a snug corner in a case was nestled another beautiful assortment of Anœctochilus.

At this end of the house is a neat comfortable room or shed, so that every plant in pot, or basket, or log, may be easily examined without being taken out of doors or making a mess in the house. Whilst enjoying ourselves here, and looking into the orchard-house, where we felt ourselves more at home, and where too our readers may feel a sort of relief after being kept so long amidst such tropical grandeur, we would desire to mention a few facts. The whole of the houses we have passed through are heated, and to any temperature desirable, by one of Weeks' boilers, which answers admirably. Another small boiler is used for the orchard-house and Fern-house. We did not notice a single unhealthy plant in the houses: if such there were, they must have had an hospital for themselves out of the way. Neither did we notice the sign of bug, scale, thrips, or any other vermin; so that if there were any such things they wisely kept out of sight. Again, there was a peculiar neatness and nattiness about the finish of all Orchids elevated in pots, or even suspended in baskets, the surface being so smooth and firm that there was scarcely a chance for a woodlouse or a cockroach finding a hole in which to burrow. Mr. O'Brien is so liberal-hearted, that we venture to make known the secret—a valuable one to Orchid-growers. It is this: Sphagnum is chopped very fine when dry; it is then moistened, placed all over as a covering about half an inch thick, watered, pressed firm by means of any suitable substance, and afterwards it keeps as firm and smooth almost as metal cast in a mould. And, lastly, large earthenware pots, No. 1 size, but without any holes at bottom, are set at intervals along the sides of the paths below the platforms, and kept filled with soft water; so that, besides giving out much vapour to the house, there is suitable, soft, exposed, warm water always ready for watering, syringing, or dipping. The practice—one of those little matters that tell for ultimate success—has several times been recommended by our friend Mr. Appleby. R. FISH.

(*To be continued.*)

ROYAL HORTICULTURAL SOCIETY.

THE Council have appointed an *Implement Committee.* Its members are Mr. E. Easton, Mr. J. Fleming, Mr. B. Gibbs, Sir J. Paxton, and Mr. J. Veitch, jun., with Colonel Chaloner as Chairman. The objects the Society have in view are the improvement of garden tools, heating apparatus, pottery, ornamental work, and, in short, of every article connected with the practice of gardening.

Applications for schedules of prizes, &c., must be made to Mr. Eyles, Superintendent of the Garden, Kensington Gore.

WORK FOR THE WEEK.

KITCHEN GARDEN.

SOWING of all kinds of seeds should be proceeded with as speedily as the state of the ground will permit. *Asparagus*, top-dress the beds, taking care not to injure the plants with the rake or fork. A little Celery or Lettuce seed may be sown over the beds, and new plantations made. *Beet*, this may be sown in drills a foot apart. *Broccoli*, make a sowing of Grange's Early White. *Cabbage*, plant out the autumn-sown, clean up the leaves, and [illegible] the beds left for Coleworts. *Capsicums*, [illegible] on a hotbed [illegible] *Cauliflowers*, stir the soil round those under [illegible] glasses, [illegible] manure water. *Peas*, continue sowing for succession crops; earth-up and stick those already up as they require it. *Potatoes*, plant for a principal early crop while the ground continues in good working order. Sow, if not already done, Turnips, Carrots, Leeks, Onions, Parsley, small salad, and pot herbs.

FLOWER GARDEN.

The preparation of flower-beds should not be delayed until the day of planting. Continue to prune Roses. Dahlias for the pleasure ground may be put in action and propagated. Roll walks and destroy weeds. The soil around Pinks, Heartsease, and other florists' flowers should be examined; and, if loosened by the frost, it should be regulated and gently pressed around them. Protect the foliage of bulbous roots whenever there is an appearance of a sharp frost. Proceed with removing and planting all sorts of evergreen shrubs, and let all improvements in this department be completed as speedily as possible. Sow seeds of tender annuals in pots, and of hardy annuals in the open ground when the weather is fine.

FRUIT GARDEN.

Take care that all newly-planted trees are securely staked and mulched, and that the blossoms of the early kinds are protected in due time. Planting, pruning, and nailing should now be finished as soon as possible: these operations cannot be finished a minute too soon. The sap having now commenced its ascending course, broken-off flower-buds and injured shoots will be the certain consequence of neglect and delay.

STOVE.

Cuttings of all free-growing soft-wooded plants, such as the different showy varieties of Justicia, Begonia, Aphelandra, Poinsettia, &c., will now strike readily in a brisk bottom heat; they will make useful plants for autumn and winter blooming. Some of the Orchids will probably require shading; at all events see that the material is ready for use, but do without it as long as possible; and with a little foresight in removing plants likely to be injured to shady situations it will not be necessary, at least in most cases, to apply it just yet. Encourage growth by syringing with clean water all over the leaves, and every part of the house, and filling it with vapour. Admit air on all favourable opportunities, but close up early to secure solar heat.

GREENHOUSE AND CONSERVATORY.

Top-dress and shift all plants that require to be so treated. Remove into the hothouse Camellias that have flowered, for the purpose of encouraging the growth of the young shoots and flower-buds. Train and tie-up climbing plants to pillars and trellises. The recently potted plants to be rather sparingly supplied with water until they have made fresh roots; keep them close and syringe frequently, so as to maintain a rather humid atmosphere. Annuals intended to decorate these houses should now be sown in heat, such as Balsams, Cockscombs, Browallias, Martynias, &c. As soon as they have expanded their seed-leaves pot them off into three-inch pots, and keep them in a warm frame or pit near the glass.

PITS AND FRAMES.

A very busy season has commenced in this department. Every spare light should be put to use as soon as frame Cauliflowers, Lettuces, Radishes, and forced Asparagus, &c., come off. Fresh hotbeds to be made in succession, and linings to be attended to. Sow Auricula, Polyanthus, Ranunculus, and Pansy seeds. Annual plants, such as Mignonette, Asters, Ten-week Stocks, &c., to be sown on a slight hotbed, and brought forward in pits to succeed the plants raised in the autumn, and that had been kept in pits or frames during winter. Auriculas will be fast progressing and must be looked to that they may meet with no check in the development of their flowers. All weak and secondary trusses of bloom to be removed as soon as they can be detected, and it is also important that they may be protected from frost and supplied with a sufficiency of water; at the same time they require to be kept cool, and to have all the air that can be given to them when the weather is at all mild. As the flower-stems advance they should be protected from sudden sunbursts by shading. Encourage the growth of Potatoes, Radishes, Carrots, and other frame crops by surface-stirring and applying tepid water. Prepare a slight hotbed for turning out under hoops Potatoes already sprouted in pots or boxes. Admit abundance of air on all favourable opportunities, and continue protection at night as long as there is any appearance of frost. Top-dress Auriculas, Polyanthuses, Carnations, &c. Attend to [illegible] which is intended for bedding-out, and go on propagating Calceolarias, Verbenas, Heliotropes, Petunias, and other plants for bedding-out as they can be spared.

FORCING-PIT.

Continue to remove forced flowers the moment a bud begins to open. Stop the barren shoots of Perpetual Roses; these rob the blossom-buds. Take care that no plants suffer for want of water. This pit as well as the houses and frames should be examined daily. Increase atmospheric moisture considerably, and syringe on most afternoons. All American plants require large quantities of water when forced. Introduce dry bulbs of sorts to succeed Gloxinias and Achimenes. W. KEANE.

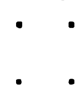
DOINGS OF THE LAST WEEK.

GENERAL ROUTINE.

MUCH the same as last week. Owing to dripping weather could do but little on the open ground. Trapped mice and birds from making depredations on Peas. Took out those sown in a house to harden before transplanting. Planted Potatoes when dry. Thinned Cauliflowers under glasses. Repotted Cucumbers, as we have still no room to plant out; though large plants, we shall most likely keep some in pots. Took up some beds of Celery to have the ground turned over, laying it in earth as thick as it would stand. Pricked out Lettuces, Celery in pans, &c.

FRUIT GARDEN.

Potted young Melon plants. Cut down young Vines that had been kept in a cool place in eight-inch pots, and painted the cut to prevent bleeding. Will set them in a little heat so as to come on slowly and be ready for larger pots, not yet being decided whether to grow them as rods or as bushes. Had intended them for the roof of a late-house, but as I cannot run a pipe or flue through it, find that would be of no use, as I could not keep the bunches there after frost set in. Having covered two pieces of a *south wall with glass*, was anxious to give as much heat to one as would keep out much frost, so that it would come before the other, otherwise if all goes well, there would be far too many Peaches at one time. We could easily bring one in before the other, by regulating air-giving, &c.; but then if too forward, and we had sharp frost in the end of March, the forward ones would suffer. To gain my object so far, I will put in the iron stove that did such good service in the conservatory when the boiler gave way at Christmas, a twelvemonth ago, and by sinking it a little near the front I should be able to take the pipe out at the ventilator at the bottom of the wall at the back, without interfering either with roof or wall. The trees against the wall after being well daubed, are now fastened to it, and, as the handiest and cheapest mode, are tied to *studs* formed of cast-metal nails, driven 4½ inches from nail to nail, into every alternate line of bricks, so that the studs from the centre of one to the centre of the other, will be nearly 6 inches apart one way, and 5 inches the other. With such an arrangement there is no difficulty in training fan-shaped, and thus the studs will remain as fixtures, and holes in the wall, and the dirt and harbour of insects by shreds be avoided. To prevent the studs rusting, they were daubed with thin white paint by a small brush a day before tying. The front of the lean-to house will have two or three rows of plants in pots at present, most likely to be planted out when somewhat established in fruiting habits, and notwithstanding the strictures of our good friend, Mr. Robson, I expect that even this season they will yield a return for the labour. Some very small ones did well last season, and some Peaches and Apricots that we bought as maidens this time last year, are now very fairly supplied with bloom-buds. We have been forced to smoke the Peach-house at length, as a black-looking fly has made its appearance in a few places, and what is worse, the tobacco smoke seems to have done little more than make them a little sickly. We must have recourse to the Weaver remedy, and a dust of hellebore or snuff if they do not take their leave of us. Twisted some long rods of Vines to cause them to break equally, and syringed those in a later house where the buds were swelling.



FLOWER DEPARTMENT.

Put in cuttings of Honeysuckles, variegated Ivies, &c., under bell-glasses out of doors; also a good number of *Rose cuttings* of the China, Tea, and Perpetual kinds, cutting them in rather small pieces right across at a bud at the base, and leaving the bud there, and one or two more, and leaves forming, were docked in so as to leave the centre chiefly. Put them in well-drained pots with a couple of inches of sand over some rough material below, and plunged them in a mild bottom heat from tree leaves, keeping rather close during the day and giving air at night. When the bases swell or callus, will give a little more heat to hasten rooting, whilst air is thus kept on at night. Potted-off those struck in autumn, and gave them a close place to start them afresh. Put in cuttings of bedding Geraniums, Dahlias, &c., keeping them at such a distance from the glass as to need little or no shading, giving them thus diffused instead of shaded light. Potted-off Geraniums for bedding where they stand too thick in boxes as room could be had for them. Potted Chrysanthemums and put them under glass just to establish themselves before being turned out. Sowed Lobelia seed, Tomatoes, Capsicums, &c. Those who have plenty of room might have done so earlier, but we like to keep them growing after they are up. Regulated conservatory, and festooned up the stove by regulating climbers; clearing dead fronds from Ferns, and setting plants gently going that had been resting during the winter. Removed Poinsettias, and put them beneath the stage in a cool vinery to harden and dry before cutting them down. Potted Begonias. Removed store-pots of Verbenas, rather stunted from being cut down pretty freely, out of their pots into a bed of richish earth, with a frame over them, and a little bottom heat beneath them, which will cause them to break more quickly and strongly, and give us the pots at liberty as well. Turned tenderer Geraniums, as Alma, out of single pots into boxes, to stand at first in the pathway of the greenhouse, and then be hardened-off. Turned out others of the Scarlet kinds into an earth pit, to be covered at first with spare sashes laid on back and front. Commenced planting out *Calceolarias* in turf pits, some 4 inches apart, to be protected by a slip of calico about 5 feet wide. This calico, in lengths about 50 feet, is fastened by tape and tacks at each end to poles about 8 feet long, and from 1½ inch to 2 inches in diameter. On these the calico is rolled when not wanted. Beginning at one end the pole is fastened securely, having previously rolled the piece on the other pole, which is then unrolled as we plant. A few stakes are laid across, such as are used for Dahlias and Hollyhocks, to prevent bagging, and then every 5 feet or 6 feet a string is sewn on the calico opposite each other back and front, and these, fastened to little stakes in the earth or turf bank, keep the calico as tight as an open umbrella. In very severe weather branches, or clean litter, are thrown over. This is the simplest and best, and, as respects labour, the most economical plan we have tried. We have sometimes tightened the calico thus, and never removed to water, &c., until a few days before planting-out time. We use cheap unbleached; it soon gets white enough with sun and rains.—R. F.

TRADE LISTS RECEIVED.

New Roses, Gladiolus, Hollyhocks, Pelargoniums, Fuchsias, &c. by William Paul, Waltham Cross, N.—This is Mr. Wm. Paul's catalogue of novelties in the way of what are called soft-wooded and bedding plants, as well as of Roses, Gladioli, &c., and it will be found well worth perusal.

A Descriptive Catalogue of Chrysanthemums, Dahlias, Fuchsias Verbenas, Geraniums, &c., by Wm. Holmes, Hackney, N.E.—Mr. Holmes has here given us the cream of the different sorts of flowers contained in the catalogue, and it will, therefore, be a very useful assistant to those who wish to make selections, and who may safely rely on Mr. Holmes' excellent judgment on such matters.

A Descriptive Catalogue of English and Foreign Novelties comprising Dahlias, Pæonies, Phloxes, Fuchsias, Chrysanthemums, &c., by John Salter, Hammersmith, W.—In this catalogue will be found many subjects of interest, and which are offered for sale for the first time in this country.

Wheeler & Son's Little Book or Selected Seed List for 1862, *Gloucester.*—Besides a very nicely-selected catalogue of garden and flower-seeds, which is interspersed with many useful observations, we have here a treatise on the Grasses of the farm illustrated with well-executed woodcuts.

Sutton's Farm Seed List, Reading, 1862.—In this will be found every article in the way of seeds necessary for stocking a farm.

Catalogue of Cuttings Grown for Sale at the Nurseries, Dursley, Gloucestershire, by John Morse.—In this catalogue every description of soft-wooded and bedding-plants is offered in the form of cuttings.

TO CORRESPONDENTS.

⁂ We request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

Birch Trees Bleeding (*J. C.*).—To stop the outflow of sap, or bleeding, from the wounds where large branches have been lopped is very difficult, and you will probably not cause it to cease entirely until the leaves are expanding, when the outflow will leave off naturally. We believe that fresh quicklime applied abundantly to the wounds serves to reduce the bleeding. You have the consolation, however, even if the bleeding proceeds, of knowing that it will not perceptibly weaken your trees. Birch trees that have been tapped, and gallons of sap taken from them, vegetate seemingly as vigorously as those which have not been tapped.

Wireworms (*An Amateur*).—The light red worms you mention were certainly not wireworms, for these are yellowish-white with brown heads. Those in the Vine-border probably were wireworms. There is no application that will kill them that would not kill the plants also. The only resource is to trap them by burying slices of Potatoes, Carrots, &c., in the soil, to examine the slices and destroy the wireworms that are sticking to them. Lime water does not kill them.

Flower Garden Plans (*P. J. Newton*).—Your sunk circular plan with those circles on each side is planted very well indeed, and the plan on the oiled paper is just as badly done as you could make it. The corner figures in such a plan as 1 and 2 should be planted in match pairs, and a variegated plant, as in 2, is quite inadmissible in an outside or end corner according to the fashion of the day. 4, 7, and 3, 8, have a radical error in the planning, and you make the fault of the plan more faulty by not planting each pair with one kind of plant. 3 must be the same colour as 8, and 7 must be the same colour as 4, and then you will see the fault is in the plan. The rest of it is very fair.

Hardy Evergreen for the Pillars of a Portico (*T. P.*).—Evergreen hardy and showy climbers are just as rare as evergreen Perpetual Moss Roses—there is not one of either. The Lonicera flexuosa, or Japan Honeysuckle, and the Sempervirens running Roses, are the nearest to what you want; and the good old Félicité Perpetuelle and Princesse Marie Roses are still two as good as any of them.

Select Fruits (*G. I. N.*).—You ask a question which it is very difficult to answer, and you do not say at what seasons you require the fruit to be ready; however, we will do the best we can for you. *Apples.*—Ribston Pippin and Bedfordshire Foundling. *Pears.*—Marie Louise and Catillac. *Apricots.*—Moorpark and Musch-musch. *Peach.*—Grosse Mignonne. *Nectarine.*—Elruge. *Green Plum.*—Green Gage. *Yellow Plum.*—Coe's Golden Drop. *Red Plum.*—De Montfort, Victoria, and Diamond. *Raspberry.*—Red Antwerp and Fastolff. *Strawberry.*—British Queen and Elton.

Troublesome Weed (*Clericus*).—It is not right to expect that we can detect a plant from a fragment of root; but it happens that we think we recognise it as the root of one of the Equisetums, or Horsetails. We could have been certain if a fragment of stem and leaves were sent to us. The whole genus are natives of soils in which there is an excess of moisture, and the only radical remedy is to drain.

Injury from Tobacco Fumigation (*T. P.*).—Either there was something prejudicial in the tobacco, too strong a dose was given—that is, too much at one smoking, or the tobacco smoke was too hot, which we think was very likely the cause. It is always safest to smoke several times, than to give too much at once: a patent fumigator will insure the smoke being presented cool. When a pot of any kind is used, a covering of damp moss is indispensable to cool the smoke as it rises. There is nothing in the pieces of charred oak; two or three live cinders, and a bit of paper put over them, and then the tobacco is as good as anything. Are you sure the vessel used was all right? Every gardener gets such lessons, as the hard knocks of experience. When such results are repeated afterwards, then there is blame for carelessness.

Datura arborea Culture (*M. F.*).—We should have liked you to have stated the length of your shoots, because from the large and drooping character of the flowers, Datura arborea, and Brugmansia suaveolens and candida being the same thing, they always look best on a plant from 3½ feet to 6 feet or more in height. According to your room, therefore, we would only remove a little—say an inch or a foot, according to room, from the top of the shoots. After doing that, they will generally show small shoots all up the stems, and we would remove all except three or four at the top of each stem. The plant would be more elegant if grown to one stem; then take the ball of the plant, disentangle the roots, shake out a good portion of the old soil, and repot in a size larger pot, using strong, rich loam. The plant will thrive admirably in the greenhouse, and so it will planted out of doors after June, and taken up in October. If the shoots were well-ripened last autumn, you will have plenty of flowers on the shoots of this year. Next season prune pretty well back, and treat again the same.

Oxalis crenata Culture (*Oxalis*).—The plant generally flowers in the autumn about the end of August. Then allow the plants to get dry gradually; take up the roots, and treat as Dahlias or Potatoes in winter, placing them in ry sand. Then pot a few in March or April in smallish pots—say a strong uber in a five-inch pot, and the curbing of the pot will cause flowers to ome more freely. The rest you may plant in well-pulverised ground out of oors, and you may eat the young stems as salad, or use the tubers in winter Potatoes. In damp seasons it is apt to grow too much to leaf out of doors flower well.

lower-garden Plan (*Crescent*).—Your one half of the coloured geotric garden, with the Prince-of-Wales'-Feather-like beds, is exceedingly ell planted. Of course, in the other half, you will repeat the same colours -cornerwise; and, of course also, there is a match for the bed 4.

table Drainage (*E. M. M.*).—The drainage, if it has no other diluting an that from washing the legs of the horses twice or thrice a-week, had etter be mixed with twice its measure of water before being applied to the [illegible]

Bedding Geranium (*J. T. C., Dublin*).—Your Geranium is the Rose Unique. A very different kind is called Picturatum in England, and in this Journal, and in most of the London bedding catalogues.

Flower-Garden Plan (*Idem*).—You are all right, except No. 1. From the beginning, this Journal set its pages against the fancy of planting Scarlet Geraniums in the centre of anything; but no one has a right to question your privilege to plant it just as you think best. We would plant it with Flower of the Day, and a broad band of Lobelia speciosa all round it. If you could plant two rows in front of the evergreens in 6, the effect would be much better—say a row of Tom Thumbs next the shrubs, and something white or variegated in front of it; but avoid yellow and scarlet in lines in front of evergreens as you would the plague.

Lilium giganteum Sowing (*I. Z., Chelsea*).—The treatment of Lilium giganteum from seeds is so tedious a process, that we would not recommend you to attempt it. The way is to sow it in a cold pit, just like so much Lettuce seed, and to have the same depth of covering, as soon as it is ripe in the autumn, in a box or flat pan, and pet it with watering, weeding, airing, shading, and seclusion from frost for three years; then to divide the seedlings out into single pots, or in an open bed of earth in the same pit, and in three more years some will bloom and some will not. Then, as to suckers, they are to be done just as the three-year-old seedlings, and in two or three or four years they will bloom according to their size—at first, the strongest will bloom in two years, and so on according to size and the skill of growing them. Your window plant does not seem to be a Solanum at all, nor anything like one; but what it is we can form not the slightest idea. If it puts up suckers from the bottom, like the plant you had it from, do one or two of them as you did this last year; but keep the old plant just as it is, and see if it does not blossom this year two months earlier, and be altogether a much finer plant; and if you will send us a bit of it in flower, we will tell you the name.

Double Calla æthiopica (*J. C. G.*).—It is, indeed, very unusual to have double flowers on the Calla, or as it is now called, Richardia æthiopica. We have never seen one, but we have heard of one or two being double before now. We would send you the copy of the Number for which you enclosed stamps, but without either your name or address!

Vines Unfruitful (*H. Christian*).—According to your treatment, which we have carefully perused, we can assign no reason for your great disappointment, except an overabundant watering in the dull months of the year, and extra manuring, and some sudden check either at the roots or in the house. The appearance denotes over-luxuriance rather than sturdiness. We by no means say that such are the reasons, as you, by a similar practice, have hitherto been so successful. We have had another case presented to us, though not so bad as yours; but that we attributed to a neglect in watering in a very dry summer, which induced the roots to go down deeper than usual; and then, too, the border was screened from the sun in the beginning of August, when, in our opinion, the sun would have exerted a heating and ripening power more than any month in the year. Once we had the care of some imported Vines that, do what we would, came as you describe, and after trying them for three years and doing nothing we grafted them, and then had plenty of fruit. We hear some strange things about Vines and Strawberries this season after such a sunny summer in England. A house of Vines we heard of the other day pruned in November, and generally allowed to break pretty well of their own accord about the middle of March, have taken to bleed all over like a shower-bath before the buds showed signs of moving. This seems just as strange an affair. From the mildness of the winter we should not have been surprised if pruning had been deferred until spring; but we know that in that place the Vines are always pruned early—frequently before all the leaves have fallen. We know of no peculiarity except that two years ago a good quantity—extra, we may say—of bones was placed in the borders. Could that have any such effect? We shall be much obliged if any correspondent or reader can throw better light on this correspondent's case.

Grapes in House with Peaches (*Little Gardener*).—Black Hamburgh, Black Prince and White Muscadine, and Sweetwater would suit you best, and either in pots, or planted out as bush standards in the way Mr. Niven does at Drumcondra. If you meant having them on the roof, to do justice to the other trees the Vines should be some 8 feet or 10 feet apart, and spur-pruned.

Tuberose Culture (*An Old Subscriber*).—Fresh bulbs of it every year from Italy should be potted just like Hyacinths, and in the same kind of soil, and be treated as greenhouse plants; or they may be slightly forced till the flower-stem is 6 inches or 8 inches high; after that the plant is impatient of close heat, and very liable to red spider.

Preventing the Gooseberry Saw-fly Caterpillar (*W. W. H.*).—Cover now the whole surface of the soil of the bed or border on which the Gooseberry bushes grow, 2 inches deep with spent tan from the tanners. It effectually destroys the larvæ, and you will have no green and black caterpillars on your Gooseberry bushes.

Grass, Weeds, &c., as a Source of Heat (*F. W.*).—We cannot recollect all that appears in this Journal, and can seldom have time to look over eighteen months' Numbers—that is asking us to do what our readers should do for us. Weeds and grass will yield a good amount of heat; but to have it regular, and not in fits and starts, they should be mixed with something to insure a regular heat from a slower decomposition. We have frequently used dry earth to moderate the heat, and, when done with, replace afresh. Our great regulator and continuous-heat-promoter in such circumstances is dry litter placed in alternate layers. The damp of the weeds and grass set all heating; and as from the openness air is gradually admitted, the heat will be kept up until there is nothing more to consume or decay. We have, from scarcity of material, made beds on the above plan, especially where we could turn them now and then. From such a bed, however, no steam must get to any plants, or they will be killed. In your case a close covering of zinc would keep all down, especially with a layer of ashes over it. On a larger scale we would use a covering of rotten dung and ashes to keep all unhealthy fumes down. Experience alone can tell how to manage such a case to the best advantage.

Painting Frames, &c. (*W. M.*).—As you would have to buy your white lead from some painter or dealer we advise you to buy your paint made up to the colour you want, as there are innumerable shades both of stone colour and green which such tradesmen could show you and make similar, all which we could hardly manage were we to write a treatise on the subject, which we cannot do. Brushes can be cleaned, but at a much greater expense labour than the price [illegible] a separate brush for each colour of paint.

ot in use keep the brushes, after being roughly cleaned, in water. eep paint, place a little oil or water on the surface.

g **Marvel of Peru** (*A Learner*).—Sow the seeds about the middle h. Place the pot at night near the fireplace. When the plants are in height prick them off, say from four to six in a four-inch pot, and em in the window shaded from the sun at first. When these attain ze give them each a small pot, and keep in the window until the of May. Then place out of doors in a sheltered place, and turn out ts into any good rich soil in the first week in June. If you like uch afterwards take up the roots, store them in dry sand, and treat as.

ota purpurea Culture (*Idem*).—As respects Vallota, the word in the Dictionary should have been "dryish," to distinguish it e moist state in summer. Vallota being evergreen should be kept rowing in winter. We regret the mistake, as we think your plant n kept too dry. Some leaves, however, would go as a matter of Water gently now, making a few holes so as to allow the water to e freely—that is to say, instead of deluging the plant at once give of moisture in a week, and the bulb will thrive very well for anything o the contrary.

olaria Cuttings (*Idem*).—You were late enough with the Calceo-ttings in December. We put in thousands in October in a cold pit, y must be moved for they are a perfect thicket—not one in two l missed. You may strike wholesale now in a mild heat, and in many days as they took in the autumn. Coolness and time are the sentials in the autumn: a little heat and dispatch are as requisite rowth was firm and stubby in autumn, when the cuttings were eat would have started them the wrong way. The cuttings will now f sap and growing freely, and a little heat not only keeps them on , but encourages the rooting process. Much of success in gardening on altering operations to suit different circumstances. When one r says that Calceolarias strike best in the cool, and another that ke best in a little heat, they are both right, and yet their practice both wrong, if times and circumstances are not considered.

etoe Seed Required.—"I shall esteem it a favour if any of your would kindly send me a few seeds of the Mistletoe, as I am desirous attempting to raise this from seed. In reply to Mr. Beaton, I can terate what I previously stated, that in this part of Devonshire or ining county, Cornwall, we have not (to my knowledge) a solitary n, and not two in a hundred ever saw it growing; why we have no e I am at a loss to say. I also know that, although ours is called lovely county of England, yet no person ever heard the Nightin-hese parts."—James Nicholls, *Tavistock, Devon.*

or Zinc Labels (*Importunate*).—We have repeatedly published pe for making this. Last November 19th we said, scrub the labels ith sand-paper, and write on them immediately, using a quill pen, e following mixture:—one drachm powdered verdigris (acetate of ; one drachm of powdered sal ammoniac (muriate of ammonia); half n of lamp black; ten drachms of water. Mix these in a two-ounce d shake every time you use it. It is ready for use as soon as the s and sal ammoniac are dissolved.

Culture (*Westmorlander*).—The offset bulbs are small, and will ith your seeds in the same parcel. Plant this month, about eight together in patches, 10 inches apart. A single row of five yards nough for a family, as the green leaves are the part used instead of nions, and the bulbs produce fresh leaves as often as their predecessors ff. After coal tar has been upon woodwork for several years, we would be no impediment to painting that woodwork either in-reen, or any other colour.

cs (*Flora*).—We are delighted with your letter, but Byron said, e a tide in the affairs of women which, when taken at the full, nobody knows where." So we always like best to hear from ladies tide is at the ebb, then we should not be overflown. The manage-Pansies on your deep heavy clay soil, with a crust of garden soil to have a stock of them struck under a hand-glass every year, rly in April or after flowering, and to cut up the old plants every and divide the roots. You are quite right, as almost all ladies are wers. Pansies should never have a bed to themselves in one's flower A row of them round the Rhododendron-bed would be charming, would be just the things along the side borders. Mulching is them than much watering.

en's Nursery (*Idem*).—What a good idea to propagate plants in ery window to attract the dear young ideas to the delights of g, and to learn them not to pull things about. The way to strike in a south window, is to have a large pot, and a little pot with out inside it, then a square of glass set loosely on the top of the big you must first begin with Scarlet Geranium cuttings, and avoid g that is likely to fail, for fear of damping the early impressions of g folks. Begonias, old or new, will never do there. What you ought a box the whole length of the sill, and of a colour to contrast of the walls of the house. Any mortal thing will grow in a box lower-bed. Pots outside windows are such a cockney institution, ould avoid them as the plague, even six miles out of London.

que and Gloire de Dijon Roses (*Idem*).—These are fine Roses recently planted—say last year, and a little earlier. We tainly like to advise you to leave the largest shoots at some length, Mr. Beaton would be down upon us with his notions about all Rose climbers, and as you know them steer a course between us and the young shoot of Lamarque quite down to the last eye or two, lve-feet shoot to 3 feet. Do the same with all the bed and little he Dijon.

illea suaveolens (*Idem*).—It might do certainly in the veran-e Solanum jasminoides did so long; but you must prune it well in n, and cover it with mats in winter, and give it a final dress-April; but you must not think of it from seed. It would cost ght times more from seed than to buy a nice little plant in a pot

Garden Plan (*A Lover of Gardening*).—The plan of your new len is exceedingly good. You must put two upright Yews—Irish ach of the grass fans near the two upper corners of each fan, as hown them in the circles; and if you could get pure white sand or broken white sand, or broken white spar, to make a nine-inch-wide path-like mark all round the grass fans, and within 1 foot of the edge, then have some upright plant, as a Humea, in the centre of the two circles on these fans, you might challenge criticism from any quarter.

Cerastium tomentosum (*M. F. B.*).—It is a perennial, and is propagated from cuttings and by division of the roots. It does not seed with us. Did you not notice lately that Mr. Thomson, the gardener at Archerfield, where they have one of the best flower gardens in Scotland, does it from cuttings on the spot in April, just as if he were planting rooted slips for a ribbon-line.

Vinery Roof of Ribbed Glass (*R. Weatherley*).—Never fear; your Grapes will not fail on account of that roofing. The colouring of the Grapes is more dependant upon a free admission of air than upon powerful light. In fact, a subdued light is best for them, they hang naturally shaded by the leaves.

Vine Leaves Wrinkled (*An Old Subscriber*).—It arises from excessive vigour; the veins of the leaves do not diverge fast enough to make room for the rapidly developed parenchyma. If you wish to prevent it you must not keep the roots so well nourished; but if the Vine bears well we recommend you to leave the roots as they are, keeping the air of the house rather less moist, and ventilating a little more freely.

Nymphæa cœrulea and Hydrocera triflora (*N. B. W.*).—We do not know where you can purchase these except of some of the principal nurserymen who advertise in our columns.

Cocoa-nut Fibre Refuse (*T. James*).—The sample you enclose is the right material.

Pteris argyræa (*Sabina*).—The specimens you sent do not show any sign of being eaten that we can discover. Had they been bitten the margins would have shown some signs of disorganisation. You surely do not mean to say that the fragments sent were once perfect and normal, and have since become depauperated as they now are! They are exactly in the condition of the depauperated sports which are known in many species of Ferns. If you mean that the plant once produced normal fronds, and now such as these, we can explain it only on the supposition that it has sported; or else that originally there were two seedlings in close contact, and that one having this peculiar character has now got the ascendancy.

Names of Plants (*W. W., Swansea*).—It is Tritileja uniflora, a perfectly hardy bulb, very pretty, but unfortunately smelling like garlic. (*G. H.*).—Your Ferns are; 1, Adiantum capillus-veneris; 2, A. cuneatum; 3, Selaginella denticulata; 4, S. uncinata; 5, Asplenium adiantum nigrum; 6, Davallia canariensis, probably; but the specimens are altogether unfit for examination, too fragmentary, and from immature plants. They came fresh. (*Beatrice*).—1, Doronicum pardalianches; 2, Juniperus communis; 3, Asphodelus luteus; 4, Pulmonaria officinalis. (*Gervase Wasse*).—It is Ajuga reptans foliis variegatis.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

May 14th and 15th. Taunton and Somerset. *Sec.*, Charles Ballance, Esq., Taunton.
May 27th, 28th and 29th. Bath and West of England (City of Wells). *Steward*, S. Pitman, Esq., Manor House, Taunton. Entries close May 1.
June 4th and 5th. Beverley and East Riding. *Sec.*, Mr. Harry Adams.

REARING EARLY CHICKENS.

More genial weather unties our hands. It is no longer necessary to keep our chickens under cover. We may, and probably shall, be visited again with unkind, bitter, and cutting easterly winds; but present comforts obliterate past sorrows, and with mild atmosphere, growing grass, and increasing daylight we look for progress among our feathered stock. The task of a poultry-keeper at this season of the year is a growing one; brood succeeds brood, and one is hardly fit to move, and hardly at that age when they can dispense with constant care, before another takes its place. We once heard a gentleman say when he admitted he had no tool-house in his garden, he had no room for one. On inquiry, we found his gardens were five acres in extent. We have heard the owners of estates lament their inability to keep several distinct breeds of fowls for want of room. Necessity is indeed the mother of invention; and, if we look at the derivation of it, is the mother of finding out. Our chickens came off fast, and then we found the oldest could dispense with the endless attention they had enjoyed. To compass that object they must be removed from the younger.

Classification is valuable among poultry at all times, but never more so than when they are very young, as chickens of a fortnight require more attention than those of six weeks, and those of the latter age than others of ten weeks; it is a positive saving of time and food to divide and separate them. If no places will do for this purpose but those possessing all the conveniences that can be described or wished for, few can afford the luxury of several breeds; but as necessity made us find out proper places, so, by telling our readers what they were, we may help them in a present difficulty, or lessen such in future.

A large old barn is the place where all our youngest chickens are kept. They are here till they are five weeks old. The rips are placed on the ground, which is covered with dust, sand, and lime. These have every care and food chickens can have, and are always under cover; when the sun is out they are moved to the front that they may enjoy it. The ground in front of the rip in which the hen is confined is covered with sods of grass cut like those that are used to cover a lawn. These are changed every other day, and all the food given to these young chickens is placed on them. No one, unless they have tried, would believe the difference in result of food given in this way, or thrown on boards or on the ground. They have the undoubted benefit of fresh earth and growing grass, without the risk and injury of frost or chill of any kind.

Our premises are only large by comparison with others, and we wanted three walks, each capable of accommodating three or four hens and chickens. We have a small meadow, and dividing that from the garden there is an old, low wall; under the shelter of this we put four hens in rips, about 5 feet apart—the chickens run out in the grass. There is a small hayrick—this affords a good place for some more. We know no place where chickens thrive better than under a rick. They have shelter from rain and from wind; they are free from draught, and they enjoy the greatest of all luxuries to a chicken—plenty of dry dust, and this is all full of grass seeds on which they feed. We were obliged to trespass to find a third walk, and we took possession of a gravel path in the garden. Our man will not believe us, and many will shake their heads when we declare our belief, founded on experience, that *chickens* (not fowls) do good rather than harm in a garden. We are quite prepared to admit they make some dirt, but that is easily removed when the chickens are old enough to do for themselves: the path is by the side of a strawberry-bed, and that is on a bank. Here the chickens work all day long, and nothing that has life can escape them. The surface of the earth is constantly being turned over, and we are sure this part will bear more fruit than any other.

We make these remarks week by week while they are fresh in our minds, and may be useful to our readers. We think what we have written will show to many that great space is not necessary for the management and separation of fowls. Two acres suffice for 150 fowls and their chickens, and for six distinct breeds.

THE CANARY AND THE BRITISH FINCHES.

(*Continued from page* 467.)

TALKING BIRDS.

Among caged birds the Cockatoo and Parrot are the best talkers, and of our British birds the Crow tribe are generally taught to talk. Of the smaller birds the Starling not unfrequently imitates the human voice, and I have heard of a hen Nightingale that could speak a few words.

But as it is of the Canary and British Finches I am now writing, I must confine myself to them. Among the former, two or three cases of talking birds have been recorded, and my father informed me of a Bullfinch that could call "mother."

The following note of a talking Canary, addressed to Dr. Gray, V.P.Z.S., by S. L. Southeby, Esq., is extracted from the "Proceedings of the Zoological Society," No. CCCLXI.:—

"Touching that marvellous little specimen of the feathered tribe, a talking Canary, of which I had the pleasure a few days since of telling you, I now send you all the information I can obtain respecting it from the lady by whom it was brought up and educated, at this our homestead.

"Its parents had previously and successfully reared many young ones; but three years ago they hatched only one out of four eggs, which they immediately neglected by commencing the rebuilding of a nest upon the top of it. Upon this discovery the unfledged and forsaken bird, all but dead, was taken away and placed in flannel by the fire, and after much attention it was restored and then brought up by hand.

"Thus treated and away from all other birds, it became familiarised with those only who fed it: consequently, its first singing notes were of a character totally different to those usual with the Canary. Constantly being talked to, the bird when about three months old astonished its mistress by repeating the endearing terms used in talking to it—such as '*kissie, kissie,*' with its significant sounds. This went on, and from time to time the little bird repeated other words, and now for hours together, except during the moulting season, astonished us by ringing the changes according to its own fancy, and as plain as [illegible] '*Dear sweet Titchie* (its name), *kiss Minnie, kiss me then dear Minnie, sweet pretty little Titchie, kissie, kissie, kissie, dear Titchie, Titchie wee, gee gee gee, Titchie, Titchie.*' The usual singing notes of the bird are more of the character of the Nightingale, mingled occasionally with the dog whistle used about the house. It sometimes whistles very clearly the first bar of 'God Save the Queen.'

"It is hardly necessary to add, that the bird is, of course, by nature remarkably tame—so much so, that during its season it will perch down from its cage on my finger, shouting and talking in the most excited state."

My father has told me there was a Canary exhibited in Regent Street, London, many years back that could speak a few words. In the catalogue of the Crystal Palace Bird Show for November, 1858, occurs the following entry:—"No. 153, Mr. Robert Standidge, 10, Reginald Road, Deptford, Mealy Turn Crown, age three years, £20. Sings and talks. Words spoken by this Canary:—'*Pretty Polly, pretty dear, call the Doctor, Polly sick, Polly sick, Pretty, pretty dear;* calls the dog Toby, Toby, and whistles him.' He speaks the above words and many others plainly. He was taught by the Parroquet, No. 306." I did not see the bird on the day I visited the Exhibition, as I understood he had been removed, and although I have not myself heard a Canary talk, yet, I think, the three instances I have named are tolerably conclusive evidence that the Canary is capable of imitating the human voice.—B. P. Brent.

DO BEES REQUIRE VENTILATION DURING WINTER?

The following letter, from a thoroughly practical Scottish bee-keeper, confirms the correctness of the opinions upon this subject which have already been promulgated by—A Devonshire Bee-keeper.

"Being a reader of The Journal of Horticulture, I have seen your articles in reference to the injurious effects of internal moisture in some of your hives. I consider the idea of lining them with matting is a good one, as from its nonconducting nature it is likely to prove beneficial. As I have a decided preference for straw hives I invariably use them. Owing to the nonconducting nature of straw, I have never found any of my stocks injured in the least by the condensation of moisture in the interior of the hives. Although I believe my hives in the winter season are more numerously stocked with bees than hives ordinarily are, as I have for a number of years made it a rule never to kill any of my bees, always uniting the inhabitants of my superabundant hives to those set apart for keeping as stocks: consequently there are generally two swarms put into each hive in the autumn, and yet, with this excess of population, I invariably find the combs and interior keep in good order. With one exception I have never ventilated my hives at the top, and this solitary instance was accidental, having overlooked the closing of the hole at the top, about 1¼ inch in diameter, through which the bees had gone up to the super, and from the nature of the straw covering above the hive, which was placed in a bee-shed made of boards, a free circulation must have been kept up. Although this was a strong hive the breeding in spring was retarded until the ventilator was detected and closed up.

"My method of treatment in winter is to place them about 2 feet apart, in what we call a bee-house—being a shed made of boards well coated with paint, about 4 feet high in front, and half this height at back—consequently they are kept free from external moisture; but I also place a dry turf on the top of each hive. I invariably keep their entrance open, unless the ground is covered with snow.

"During the calm fine weather which we had in January for several mornings in succession, I found three of my Ligurian hives with moisture running from the entrance-hole nearly to the end of the alighting board, at about an angle of 60°. On observing this I began to suspect that there would be an excess of moisture inside, but on examination, the hives were perfectly dry; not so the boards, however, as the upper sides of them in all three were completely saturated with wet. They were easily replaced with dry ones. On looking through my other hives I found the boards under most of my Ligurian hives damp to a greater or less extent; some of them only damp on the part underneath the combs where the bees were most numerous. There was only one of my hives of common bees that had an appearance of moisture on the board, evidently because they were several weeks behind the others with the brood, and all the Ligurians are rearing a considerable quantity of brood. I may mention that on putting in the dry boards I enlarged the entrance; and, so far as I am aware, there has been little or no condensation of dampness internally since. I do not suppose the damp boards would have caused any serious injury if they had been allowed to remain, as all the hives were entirely dry—thus making very apparent the different effect which the same internal atmosphere would have on materials of different conducting qualities.

"I have some doubts if much good would be obtained by ventilating the hives in the beginning of winter, as they are evidently most liable to damp when the breeding commences in early spring.

"Next summer I should be glad to hear of your putting one or two of your Ligurian swarms into good straw hives, and on the following winter you will find them entirely exempted from the annoyance of dampness, even without top ventilation.

"Our bees had a few fine days about three weeks ago, when I observed a few bees in all my hives collecting pollen; but that is now (6th March) put a stop to, as we have a snow storm.—J. S."

VENTILATING HIVES DURING WINTER.

Being thoroughly impressed with the paramount importance of a due regard to the careful ventilation of hives during winter—believing as I do, that more stocks are weakened, affected with dysentery, and perish annually from the neglect of this needful precaution than from all other causes whatever, if we except starvation—I therefore read with much pleasure Mr. W. Johnson's interesting paper on this subject at page 308.

I have tried various expedients to accomplish this desirable object. For some years I promoted ventilation by drawing all the slides, an empty super having been previously placed on the stock. Subsequently, thinking an upward current of air passing up between the central combs was possibly annoying to the main body of the bees there congregated, and too great an interference with their economy by unduly lessening the temperature of that portion of the hive, I ran in these slides, keeping only two on each side drawn. This I found quite sufficient in ordinary cases. Latterly, I was induced, on the recommendation of a most experienced Ayrshire apiarian friend, to discard upward ventilation altogether, and follow the practice generally pursued in that county, of ventilating exclusively below by means of ekes of the same dimensions, and about half the depth of the hives underneath which they are placed. This mode I found as efficacious as he described, and think that so simple a device should be resorted to in every case, whether the hive be of wood or straw, keeping it and its contents all sweet and dry, from the plentiful supply of pure air circulating below from the open entrance, and at the same time freeing the inmates from all annoyance of upward draughts, to which the first-described mode rendered them liable. How stifling and prejudicial to the health of our little favourites must be the practice of non-ventilators, particularly in hives with combs wrought close to the board, should they in addition use a contracted winter entrance.

I can also endorse Mr. Johnson's opinion as to the saving of food effected by ventilation. My experience also coinciding with his own as to the fact that "Bees kept in a comparatively dry atmosphere by thorough ventilation, will come through the most severe winter in our climate in better condition than when ventilation is prevented." The best illustration of this coming within my own observation was the observatory-hive I was enabled to chronicle at page 202, Vol. XXV., of The Cottage Gardener, as successfully withstanding 25° of frost, as shown on thermometer behind, on the memorable morning of the 24th of December, 1860; in addition to the ventilation afforded by India-matting slides between the bars, that hive had plenty of vacant space below. The entrance, 4 inches by half an inch, if I recollect, stood fully drawn, and often have I heard the north wind, to which aspect it stood, blow through it, whistling on the zinc-covered fumigator space behind; and I feel convinced that had it not been for the thorough ventilation thereby afforded, from the closeness of the glass observatory and the damp consequently engendered, this hive must have inevitably perished.

I am glad to observe our Devonshire friend is turning his attention to this subject, and it will be interesting to learn the results of his experiments on Harbinson's plan of internal matting lining, such I should be disposed to think would absorb, though, I should fear, not prevent the internal moisture; prevention in this as in all cases being preferable to cure. I regret my opinion does not tally with that of "A Devonshire Bee-keeper," as to ventilation being "only the substitution of a greater evil for a less one," by checking breeding in cold weather, and therefore, still "an open question." On the contrary, I have never yet seen a hive in a bad damp state in spring afterwards come to any great strength in population. Whereas, on the other hand, in our variable northern climate (which offers a marked contrast to salubrious Devonshire), we consider the retarding of the queen's breeding till the natural or customary period of the district anything but an evil, but on the contrary, as decided a gain as the late expansion of the blossom-buds on our fruit trees, which is the means of generally insuring a crop. Whereas their premature development is nipped by the same frost that injures, by checking the queen's production, forcing the nurses upwards, and causing the annoyance of quantities of abortive brood. Indeed, as everything in the animal and vegetable kingdoms must enjoy a winter of repose, I look upon a prolonged or premature stimulation of the queen's breeding as a very questionable proceeding, telling most prejudicially on her productive powers, and which by early ventilation in winter, and prolonged in early spring, I rather discourage.—A Renfrewshire Bee-keeper.

MANAGEMENT OF LIGURIANS—HOW TO PLACE A SWARM IN A FRAME-HIVE.

The stock of Ligurians which I obtained of "A Devonshire Bee-keeper" at the latter end of last summer being remarkably strong and healthy, I shall be obliged by his replying to the following questions:—

At present the Ligurians stand in the midst of five stocks of common bees. Is there not a danger of the breeds becoming hybridised on both sides in this position?

I wish to keep at least one stock of pure Ligurians, should I better accomplish this by moving them to another part of the garden?

In performing operations upon bees, such as transposing combs, searching for and removing queens, &c., does "A Devonshire Bee-keeper" use fumigation? and does he consider that fumigation acts injuriously upon bees? Whenever I have commenced operations in this way without fumigation on hives which are destitute of bars or frames, they have begun to kick up such a fuss that I have been compelled to desist without accomplishing my object.

I should also be glad to know the best mode of placing a swarm in a frame-hive.—G. F. B.

P.S.—I can fully bear out the statements advanced in The Journal of Horticulture, as to the superior hardiness of the Ligurian breed.

[Both species will most probably become hybridised under the circumstances you mention; nor is a removal to so short a distance at all likely to diminish the risk.

If it be desired to Ligurianise the entire apiary, the best plan will be to furnish all the colonies with Ligurian queens from the stock in your possession, leaving their impregnation to chance. These will at all events breed Ligurian drones, and next year may in their turn be weeded out and replaced by young Ligurian sovereigns bred as before from the original queen. She will breed true as long as she lives, and next year her offspring will have a fair chance of a true impregnation from the multitude of Italian drones which will then exist.

When bees are irritable, a little smoke is a wonderful peacemaker. It should, however, be used sparingly, and never pushed so far as to produce stupefaction, which, I believe, is very injurious to bees.

When it is desired to place a swarm in a frame-hive, the bees should in the first instance be shaken into a common straw skep. As soon as they are pretty quiet (say from ten minutes to a quarter of an hour after hiving), spread a sheet in a shady place and stand the frame-hive upon it, without its floor-board, and with its front raised on blocks rather more than an inch. Then knock the cluster of bees out of the straw skep upon the sheet immediately in front of the frame hive, which they will presently seek refuge in. Should they manifest any reluctance in so doing, Mr. Langstroth recommends that a few spoonfuls be scooped up in a large spoon and shaken out close to the raised front of the hive. As these go in with fanning wings they will raise a peculiar note, which communicates to their companions the joyful news that they have found a home. If combs are fixed in the frames, the crown-board may be removed and the cluster knocked out on the top of the exposed frames. The bees will disappear between them with the utmost alacrity, delighted to have met with a ready-furnished dwelling, and the crown-board having been replaced the hive should at once be removed to the position it is intended permanently to occupy.—A DEVONSHIRE BEE-KEEPER.]

HIVES FACING THE NORTH.

IN answer to "J. L.," we have this reply from one of our most experienced apiarians.

"The experiment as to a north aspect for bees has been tried, sometimes successfully, but not always, and, perhaps, no general rule can be laid down, so much depending on locality, as natural shelter from wind, &c. Dr. Bevan says, 'Where due attention has been paid to other circumstances calculated to promote their prosperity, I have known them thrive in almost every aspect.' Dr. Dunbar remarks, 'It is obvious that hives ought not to face the direction of the prevailing winds.' 'So many circumstances,' says Mr. Taylor, 'have to be taken into account, that it is difficult to lay down any rule of universal application, and the bees have been known to prosper in all positions, from due south to north. A north aspect need not necessarily be an exposed one in winter, nor at other times one wholly uninfluenced by the effects of the sun. In forming a decision we ought to take into account the position of buildings, trees, &c. Moreover, the kind of house must have its weight in the scale, for where this is one closed at the front from the immediate influence of the sun, aspect is of less importance. Dr. Bevan placed his hives around the interior of an octagon erection, without perceiving any sensible difference in their well-doing.' The apiarian Geddes found that 'bees, standing on the north side of a building, whose height intercepts the sun's beams all the winter, will waste less of their provision, almost by half, than others, and yet in the spring are as forward.' "—H. T.

LIGURIAN BEES FOR AUSTRALIA.

I HAVE been favoured by Messrs. Neighbour & Son with a sight of, and permission to copy the following letter from Melbourne, Australia, making inquiries upon this interesting subject. The difficulties attending the transportation of bees to the antipodes are undoubtedly very great, although I am disposed to think they may be successfully encountered and overcome.

Any hints from the accomplished apiarian correspondents of THE JOURNAL OF HORTICULTURE which may assist in the solution of this problem, will be highly esteemed by—A DEVONSHIRE BEE-KEEPER.

"Melbourne, 26th November, 1861.

"Gentlemen,—The introduction into Victoria of the Ligurian bee having recently been a subject of much discussion here, may I ask the favour of your replies to the following questions in connection therewith:—viz.,

"1.—Are swarms or colonies of the Ligurian bee procurable by you in England?

"2.—What would be the invoice price per stock, sent in suitable plain, bar, or other hives?

"3.—Would you undertake to forward them hived in such a manner as would insure their safe passage to Melbourne; ordinary casualties excepted?

"4.—Could you forward them immediately on receipt of an order—*i. e.*, without waiting for any particular season? As far as this country is concerned they might arrive at any season with every prospect of success.

"In addition, any brief observations on their management—f any management peculiar to this description of bee is nece[illegible]ary—would be much valu[illegible].

"J. SAY[illegible] [illegible] *Apiarian Society o[illegible]*"

[illegible]

[illegible] various circumstances [illegible] to fly [illegible]ly two miles in search o[illegible] [illegible]owers, and even [illegible] out in fine, warm, calm weather in May and June, when [illegible] abundant [illegible]

to 1400 yards. The sweet perfume of the sycamore, the maple, and the later lime blossoms, has great attraction, and the bees have the means of communicating to each other the mode of finding the direction in which the best and sweetest flowers are placed. In June and July the white Dutch clover (Trifolium repens) is one of the greatest attractions to bees. A soft, warm, southerly breeze is the most favourable for honeydew, and also for dispersing the sweet odours of the clover and the lime tree, and in weather as described, I believe the scent of these and all aromatic flowers is carried "down wind" at least half a mile. In these times, when honeydew is on the oak leaves and other trees, and when the thermometer is at 7[illegible]° it is dangerous to stand in the way of the exit and arrival of our honey-laden favourites.

In a fine, dry, and now-and-then electric atmosphere, bees will collect (during the honeydew) as much store in a week as they can in a common season in a calendar month.

The lime tree seems to have even an intoxicating effect or intense attraction, in the case of the wild bees. I have often observed the latter remain until it was nearly dark on the lime blossoms, and on many mornings after I have seen the wild bees by dozens lying in a dormant state under the trees, having remained all night, and this during most splendid weather a few days after midsummer.—H. W. NEWMAN.

[Mr. Huish relates facts which show that bees will fly four miles to a good honey pasturage. He and Bonner visited the Isle of Bass at the entrance of the Frith of Forth. It is mostly covered with heath, and to their surprise they saw a number of bees collecting honey from its flowers. Not a hive of bees was kept on the island, and it is four miles from the nearest point of the mainland. Mr. Huish dredged flour on bees collecting honey on heath three miles from his apiary, and the person left to watch the hives saw many of the befloured bees come and enter them.—EDS.]

OUR LETTER BOX.

BUFF COCHIN-CHINA EGGS (*A Subscriber*).—Apply to any of the prizetakers who advertise eggs for sale in our columns. Galvanised-iron netting is the best material for keeping fowls within the desired bounds. Three feet high would be enough for Cochin-Chinas, and 6 feet high for other varieties. Do not have a bar at the top, or the fowls will try to fly up upon it. You will see the netting advertised.

IVY AND POULTRY (*C. H. B.*).—We do not think that fowls would eat Ivy leaves; at all events the leaves would not injure them, for the wall of a poultry run we knew was covered with Ivy and the fowls throve well. You will find full particulars relative to Andalusians in our "Poultry Book for the Many," which you can have free by post from our office for seven penny postage stamps.

PIP OR GAPES (*Partridge-Cochin Breeder*).—The two diseases are totally different, or rather *pip* is only a symptom of a disease, being a dry scale on the tip of the tongue occurring when a fowl has roup, diarrhœa, or gapes. Cure the disease, and the scale disappears—never cut it off. *Gapes* betrays itself by making the bird frequently yawn or gape, and this is occasioned by little worms irritating the windpipe. Innutritious diet, want of green food, and impure water are causes of this disease. Put some rusty nails into the water; give more stimulating and nutritious diet. Put the patient in a box, place in the box at the same time a sponge dipped in spirits of turpentine on a hot-water plate filled with boiling water, so that the fowl must breathe the turpentine fumes for half an hour. Repeat this for three or four days following.

FOWL-HOUSE (*E. Coucher*).—We have the window of our fowl-house turn on a pivot, so that we can ventilate in hot weather, day and night. In cold weather we close the window at all times.

BEE-HIVES—BEES UNABLE TO FLY (*T. P.*).—Messrs. Neighbour & Son, 149, Regent Street, and 127, Holborn, supply flat-topped straw-hives, and will quote prices on application. They would also furnish either bar or frame-hives, fitted with the Woodbury comb-bar, which obviates the necessity for affixing guide-comb. The bees which collect pollen are healthy, whilst those which fall about the ground are probably suffering from dysentery. They must on no account be shut in, but the floor-board should be frequently changed. Feeding with syrup, to which a little wine or spirit has been added, is generally recommended in these cases.

CANARY LOSING ITS FEATHERS (*T. H.*).—Your Canary is suffering from over-fatness, caused by the feeding on hemp and rape seed. That is the cause both of the shortness of breath and the losing of the feathers; discontinue the hemp and rape seeds, give plenty of green meat, and allow the bird to bathe.—B. P. B.

LONDON MARKETS.—MARCH 17.

POULTRY.

There has been little alteration since last week. The supply is [illegible] with little demand. We do not anticipate a good trade till after Easter.

Each—	s.	d.		s.	d.	Each—	s.	d.		s.	d.
Large Fowls	4	[illegible]	to	4	6	Ducklings	4	0	to	4	[illegible]
Smaller do.	3	[illegible]	„	[illegible]	6	Pigeons	0	8	„	0	[illegible]
Chickens	2	[illegible]	„	[illegible]	6	Rabbits	1	2	„	1	[illegible]
Guinea Fowl	[illegible]	[illegible]	„	3	9	Wild do.	0	8	„	0	9
Goslings	[illegible]	[illegible]	„	[illegible]	[illegible]	[illegible]	0	0	„	0	[illegible]

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	MARCH 25—31, 1862.	Weather near London in 1861.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
25	Tu	Lady Day.	29.904—29.760	48—42	E.	—	54 af 5	19 af 6	40 3	25	6 6	84
26	W	Pogonia glabra.	29.675—29.518	57—39	S.W.	·01	51 5	20 6	3 4	26	5 48	85
27	Th	Banksias.	29.457—29.384	59—43	N.E.	·17	49 5	22 6	23 4	27	5 30	86
28	F	Proteas.	29.522—29.416	60—30	S.W.	.01	47 5	24 6	41 4	28	5 11	87
29	S	Phyllicas.	29.713—29.648	57—34	W.	·02	45 5	25 6	58 4	29	4 53	88
30	Sun	4th, or Midlent Sunday.	29.608—29.564	55—36	S.W.	·13	42 5	27 6	sets	●	4 34	89
31	M	Isopogon formosus.	29.665—29.535	55—27	S.	·01	40 5	29 6	17 a 8	1	4 16	90

Meteorology of the Week.—At Chiswick, from observations during the last thirty-five years, the average highest and lowest temperatures of these days are 52.9° and 33.6° respectively. The greatest heat, 75°, occurred on the 27th in 1830; and the lowest cold, 14°, on the 25th in 1850. During the period 156 days were fine, and on 89 rain fell.

FIRST SPRING SHOW OF THE ROYAL HORTICULTURAL SOCIETY.

March 19th.

THIS was certainly a most decided success, and at the same time the most thorough breakdown I ever yet saw in our arrangements. No body of men could foresee that four thousand crinolines, each fourteen yards round, could meet at four o'clock of that day, where four hundred could hardly be expected: therefore, there was only room allotted for fourscore crinolines on the supposition that one-half of the number could find sufficient amusement in eyeing the other half from the outside, while that half were eyeing the happy result of the most happy resolve of giving vent and ventilation to the powers of gardening and competition in London in the month of March. Those not there never saw such fun or so much good humour in so small a compass in all their days—at all events, I never did, only I was in a tremendous fix three or four times before I could release myself from my task. The fact is, I miscalculated the numbers that might be expected in the afternoon, just as the Council did, and sauntered about all the morning, or stood apart gathering information to rub off the rust of the last few months; and wherever I could see a right Fellow of the Society in the right place for me, off I went for a gleaning, instead of doing what I ought to have done in the first instance. But catch me that way again, and you may venture to expect catching the Council of our Society in such another fix.

Their Royal Highnesses the Duchess of Cambridge and Princess Mary were more fore-knowing than your humble servant, for they were there early in the day, attended by the Duke of Buckingham, Sir Wentworth Dilke, Mr. Fairbairn, and others.

The Council and Committee-room at the entrance of the garden was the place where the Exhibition was held, instead of in the grand conservatory, and the result was as just stated—there was not room for one-twentieth of the company. The room was exceedingly well arranged for effect. All round the walls were the large specimen plants in running collections, chiefly from the nurseries. In front of them and shelving down to the height of one's knee were placed the various displays of smaller plants and the large collections of Hyacinths, Tulips, Polyanthus Narcissus, Primulas, Cinerarias, Roses, Cyclamens, collections of cut blooms, fairy-like Air Plants, little novelty gems, great botanical curiosities—as the Bird Plant of Mexico, from Mr. Salter; the morphological Primulas of the Messrs. Downie, Laird, & Laing; the Pimelea something and three Hardenbergias from the Messrs. Veitch, who also had one of the most puzzle-peg plants in Europe there from Manilla, sweet as a Violet, and no man in England or out of it can name it and be certain of being right. It is an Amaryllid of the Pancratioid group; but whether it be a Pancratium, or a Hymenocallis, or a Choretis, or what, no man on earth can tell till the seed is seen.

Then, in the centre of the room was a span-roof-like stage of vast beauty with the most ordinary spring-flowering plants at one end, and falling gradually on both sides to the other end into the most rare and expensive things which money, by introducing novelties, or skill in new creations could produce so early in the season. And up and down on this middle stage could be seen the next best improvement in gardening skill, after the Hyacinths, on either side—I allude to those dense and delicate masses of the Lily of the Valley from the Society's own garden at Chiswick. Nothing nearly like to them has been seen in London by the writer, who has seen most of the moves there for the last thirty years.

I venture a prophecy that there is not one new member of the Society out of one hundred who might not learn a lesson from a leaf out of Mr. Eyles' book in forcing flowers, the very best part of gardening after all when one cannot get much out of doors. And what is the use of all that crinoline to married people if the drawing-rooms are not full of forced flowers from Michaelmas to May-day, besides a change of dinner decoration flowers three or four times a-week? Botany and bedding plants, florists and pomologists, are just as if they were fresh from the flood, as compared with what I mean, in the eyes and affections of such people as thronged the First Spring Meeting of the Royal Horticultural Society. That is my prophecy, and the Lily of the Valley was the cause of it; and I would be more proud of being the grower of those I saw than to have been the successful candidate for the honour of all the Orchids there. But there is selfishness even in that pride. Any man who could do all the winter flowers in that style would never be one month out of a situation as long as any one now alive could remember when crinoline was the fashion. Book that as quite certain, and think of it now and then, and I shall turn and book the prizes.

Beginning with the Hyacinths, in which Mr. Cutbush, of Highgate, was first, and Mr. Wm. Paul second, each with eighteen kinds in collection, and each with eight times as many more for effect and from good will to the Society. All the nurserymen who exhibited displayed the same evidence in their desire to further the progress of our craft. Names and classes of flowers without the colours are alike tiresome and most tedious for ladies; they tell me so over and over every year for naming so many of them, and having had a grand chance here, I took them all by their colours, and No. 1 is the best in each shade, No. 2 the next best, and No. 3 next—thus: The highest reds or crimsons, 1, Aurora Rutilans; 2, Lina; and 3, Amy. The next lower shade of red and crimson, 1, Milton; 2, Von Schiller; 3, Robert Steiger; 4, Mars; 5, Madame Rachel; and 6, Baron von Rothschild. The third shade of red, 1, Koh-i-Noor; 2, Mrs. Beecher Stowe; 3, Queen Victoria; 4, Susannah Maria—four splendid sorts. The next we come to is pale blush. Here, 1 is Norma; 2, Lord Wellington; and 3, Sultan's Favourite. Then, for contrast, I took the darkest, so as to have the pure whites after the porcelain blues, just as the light blushes are before the blacks. I am almost certain now that is how the colours ought to be arranged in planting or in setting the plants in bloom on a drawing-room side-table, or as most ladies would set them, and say nought about it.

The blackest there were—1, Prince Albert; 2, General Havelock; and 3, Blackbird. Dark blues, 1, Argus; 2, Baron Von Tuyll; 3, Prince of Saxe Weimar; 4, Laurens Koster; and 5, William I. Next is porcelain blue, a very rich class of the richest substance in the flowers—1, Orondates; 2, Bloxberg; 3, Couronne de Celle; 4, Grand Lilas; 5, Van Speyk; and 6, Regulus.

Now the pure whites fall in—1, Madame Van der Hoop of course (any madame of such purity, and with a hoop too, could not be kept out of the first rank); 2, Mont Blanc; 3, Queen of the Netherlands; and 4, Alba Maxima. Then mauve—1, Prince of Wales: 2, Madame Haydn; 3, Honneur d'Overeen. Then yellow—1, Ida; 2, Victor Hugo; and Aurora, red and yellow veined.

Among the newest Hyacinths in which Mr. Cutbush took the lead I noted Reine des Hyacinths as a deeper red than Lina; Pélissier, also a good red; and Duc de Malakoff, quite a new colour, in shades of red and yellow.

Then, a large collection of Persicum Cyclamens from the Wellington Road Nursery; another very interesting collection of distinct kinds of Primula sinensis, including ficifolia, the Fern-like-leaf kind, both white and red. Other collections of the same from Messrs. Cutbush, Dobson & Son, and Bull, of Chelsea. Some Primulas, also, from Mr. Turner, of Slough, and most curious green sported Primulas from the Messrs. Downie, Laird, & Laing, every petal of these and all the stamens were incipient plants; and they had a hen-and-chicken Cineraria going to sport for something. By these were the only set of florists' Cinerarias from Mr. Turner, of which George Eyles, a deep crimson self, and Mrs. Harry, a deep purple edge, and a large white eye, were my favourites.

The Messrs. Smith, of Norwood, had a large collection of their strain of Cinerarias right opposite, of which Blue Bonnet was the first a lady would fancy; then Princess Alice, a lively flower; Prince Alfred and Defiance being the next best.

The only new Geranium there was Flower of Spring, from Mr. Turner, side by side with a good sample of Madame Furtado Rose, and another darker one, too soon in the season to judge. There were myriads of fine-leaved and variegated plants from Messrs. Veitch, Williams, Bull, and Parker, the prettiest of them all being the elegant Cyperus alternifolius variegatus. Here was a very old plant one seldom sees, from General Fox's garden, the old Marica striata, also called Iris sinensis, and an excellent cross Rhododendron from Edgworthii by ciliatum, in which the habit of ciliatum seems stamped on the other, while the larger bloom and the scent are retained. Another of them, a cross of Edgworthii by Gibsonii, has not resulted in giving the closer habit of Nillgherry to the Sikkim plant, but the flower is grand. Mr. Standish sent a Skimmia which, if it will have red leaves like japonica, would be a good thing; and up and down on that centre stand were some nice Roses from Mr. Todman, gardener to R. Hudson, Esq., Clapham Common.

A species of Phyllagathis was one of the best fine broad-leaved plants there. It was from the Messrs. Veitch; and Acacia eriocarpa was one of the best of them there from the same firm —a dense-growing, very small-leaved Acacia, one mass of bloom.

All round the walls were the nursery collections, and chiefly such as various Epacrises, Eriostemons, Acacias, Boronias, Azaleas, Rhododendrons, Camellias, and Ericas; and there was one collection of excellently forced spring-flowering plants from the Messrs. Fraser, beginning with a snowball Guelder Rose, about the size of a show Pelargonium, and as well bloomed as you ever saw it in May out of doors. Geranium Reine Hortense, forcing kind I never saw before; Persian Lilac; Philadelphus coronarius, the old Syringa of the ancient shrubberies, and none better; the Goubault Tea Rose, Dielytras, Deutzia, Azaleas, Ledum palustre, and something else I lost between two magnificen [illegible]lines. Of Hippeasters (called Amaryllises by the [illegible] coarse as corduroy against satin as compared with the race of the Belladonna, the type of the true Amaryllis), the best were from Mr. Parker, and he had one very superior kind by itself, the only real improvement I have seen in Hippeasters since 1840.

Hippeasters, by the way, are far more useful in private families than Amaryllises, and no race of bulbs are more easy to manage and to have in bloom nine months of the year, if one had a good assortment of them, which no one near London seems to have, as you never see more of them in London than the Aulicum and Jobsonii breeds, and all the breed of Aulicum is very coarse. There is a very good Hippeaster to breed from now at Chiswick garden, sent by the collector from the north of Rio, the Amaryllis, he calls it, with the white stripe in the leaf—that is the true Hippeastrum reticulatum, the Amaryllis striatifolium, of "Botanical Magazine," 2113, and those Fellows who are fond of the voting by ballot ought to look after it, to smooth down and to give some sort of shape to the Ragged Jacks of the platypetalum variety of Aulicum, from which most of the London Amaryllises are descended.

Talking of shape, the best-shaped Camellia there was named Sarah Frost, and sent from Mr. Standish, a godsend to our florists, for which I saw a first-prize ticket given as I was getting off from the Corbularias within; and there was another prize ticket to him for more Camellias, but I could not see the names.

Mr. Salter, of the Versailles Nursery, had a noble match pair of tall Camellias as you entered the door, one on each side.

Mr. Young, gardener to R. Barclay, Esq., Highgate, was the only gardener who ventured out with superior specimens, and he was very successful there and in bulbs, well nigh knocking the big growers of them the one against the other.

The Duchesse de Berri Camellia, a pure white, seems to be nearly as good as the old white and Fimbriata, two Camellias which have never yet been beaten, but that Duchesse has something that way in her eye.

Mr. Williams, of the Paradise Nursery, set up two large Vanda suavis, a match pair, one on each side of a big Cyanophyllum magnificum, the three best sets for effect there; and in front of them were a host of most valuable plants, one of them Sphærostema marmorata growing exactly as Beaumontia grandiflora ought to be seen when intending it to bloom; and several Orchids, Amaryllises so called, and a huge lump of Sarracenia purpurea.

There was a fine new Lælia from R. Warner, Esq., the lip in the way of purpurata, the sepals spreading wide with a peculiar tint of light cinnamon colour, and that colour dotted over partially like a thrush's egg.

A vast lot of early Tulips from Mr. Cutbush, and Mr. Young his rival, and a large assortment of Polyanthus Narcissus from the former made the farthest front of the room as gay as the Hyacinths certainly did that on entering the end door.

The box of Cut Roses from Mr. Paul was really prime stuff for March; but Mrs. James Stoddard defeated him and all our florists as completely as she overcame your humble servant with her French paper Dahlias at the Crystal Palace. We must have a leaf out of her book if we expect Roses ever to be circles or half-balls. And were it not for the ungallant manner Mr. Eyles went about his Lilies of the Valley, Mrs. Conway, of Earl's Court, Brompton, would have put our gardeners to shame with her first-prize collection of them. Let Mrs. Conway but get one leaf out of Mr. Eyles' book on these Lilies, and she is booked herself for life in the books of all the best ladies of Brompton who could then almost add them to their bonnet ornaments—and why not?

A lot of young Fuchsias from Messrs. Carter, were said to be double, and all the leaves, in summer, to be tricolor in the way of the Amaranths, the colours at present indicating that character.

D. Beaton.

Again we florists must claim, I think, a victory, for surely we contributed the most extensive and interesting portion of this day's Exhibition. What would it have been without the Camellias and Hyacinths? And who would have cared for the Eriostemons, &c., if they had not these to fall back upon?

Camellias, I must honestly say, disappointed me. It was evidently a mistake to exclude nurserymen. But what were private growers about? Surely one would think there were some plants to be found! and it withal strikes us that it would be well to offer prizes for cut blooms in boxes, as for Dahlias, &c., as we should then have a better opportunity of judging of the relative value of the sort.

Unquestionably the finest Camellia there, in shape, was Sarah Frost, an American variety, sent by Mr. Standish. It was absolute perfection, laid out most regularly, and a delicate rose colour with white stripes. Duchesse de Berri, too, was another exquisite in shape, and a beautiful clear white. Then there was Mœsta Rosea, very fine; and Montaroni, a large and good white. These all were fine plants, sent by Mr. Standish. Queen of Beauties, is said to be the finest striped Camellia out, and has been introduced by Mr. Bull, from Belgium.

Amongst Hyacinths there were several flowers of considerable novelty, but we look for an improvement in this flower. We want large and better shaped bells, as well as finer trusses. A new kind in Mr. Cutbush's six seems likely to be the parent of a different strain. It had very large and waxy bells, and was semi-double, but there was a novel appearance about it that augured an advance. Duc de Malakoff was a very fine nankeen flower with crimson stripes, very remarkable in appearance and attractive. Macaulay, was a fine striped red; and Queen of Hyacinths, a very bright red. Paix de l'Europe and Pelissier, were also very good. Amongst the older kinds, Argus, blue, with white eye, is striking and good. Madame Hodges, Prince Albert, Grand Lilas, Charles Dickens (blue), Grandeur à Merveille were all excellent, and I have no doubt the "chiel" I saw there will tell us what he thinks about them as to their decorative properties.

We must not omit the three tidy little plants of Madame Furtado Rose, sent by Mr. Turner, which fully sustained its character as a fine Rose. There was a plant, too, of one of the new candidates for public favour, sent by Mr. Turner, but so high up that I could not see it very well, but it seemed a very bright-coloured flower, well cupped; if so, it will be an improvement. It was named François Lacharme. It was just a little foretaste of what we are anxiously looking out for.

Cinerarias were not sufficiently forward for this Show, nor did we see anything of very great promise amongst them.—D., *Deal.*

PRIZE LIST.

Eighteen Pots of HYACINTHS, twelve distinct kinds (*Open*).

First, W. Cutbush & Son, Highgate Nurseries. Second, W. Paul, Cheshunt Nurseries, Waltham Cross. Third, C. Grimbly, Albion Nursery, Stoke Newington.

Twelve Pots of HYACINTHS, distinct kinds (*Prize offered by Mr. James Cutbush—Amateurs*).

Prize, W. Young, gardener to R. Barclay, Esq., West Hill House, Highgate.

Six Pots of HYACINTHS, distinct kinds (*Amateurs*).

First, W. Young, gardener to R. Barclay, Esq., West Hill House, Highgate. Second, A. Carr, gardener to B. Noakes, Esq., North Hill, Highgate. Third, T. Todman, gardener to R. Hudson, Esq., Clapham Common.

Six Pots of HYACINTHS, new distinct kinds (*Open*).

First, W. Cutbush & Son, Highgate Nurseries. Second, W. Young, gardener to R. Barclay, Esq., Highgate. Third, W. Paul, Cheshunt Nurseries, Waltham Cross.

Twenty-four Pots of TULIPS, three bulbs in a pot, six kinds (*Nurserymen*).

Prize, W. Cutbush & Son, Highgate Nurseries.

Eighteen Pots of TULIPS, three bulbs in a pots, four kinds (*Amateurs*).

Prize, W. Young, gardener to R. Barclay, Esq., Highgate.

Twelve Pots of TULIPS, three bulbs in a pot, three kinds (*Amateurs*).

Prize, W. Young, gardener to R. Barclay, Esq., Highgate.

Six Plants, CAMELLIAS, distinct kinds (*Amateurs*).

No competition.

Four Plants, CAMELLIAS, distinct kinds (*Amateurs*).

No competition.

Single Plant of CAMELLIA (*Open*).

First, J. Standish, Royal Nursery, Bagshot. Second, J. Salter, Versailles Nursery, Hammersmith. Third, A. Henderson & Co., Pine Apple Place, Edgware Road.

Nine Pots of LILIES of the VALLEY (*Open*).

Prize, Mrs. Mary Conway, Earl's Court Nursery, Old Brompton.

Six Pots of Stove AMARYLLIS, three kinds at least (*Open*).

First, W. Parker, Exotic Nursery, Tooting. Second, W. Lakeman, Grove Gardens, Hendon.

Six Pots of any kind of PRIMULA (*Open*).

First, T. Todman, gardener to R. Hudson, Esq., Clapham Common. Second, Messrs. Dobson & Son, Woodland's Nursery, Isleworth. Third, W. Cutbush & Son, Highgate Nurseries.

Twelve Forced GERANIUMS (*Open*).

No competition.

Twelve Pots, SPRING PLANTS in flower, not forced (*Open*).

Messrs. J. Veitch & Son, Royal Exotic Nursery, Chelsea and Exeter. Second, J. & J. Fraser, Lea Bridge Road Nurseries, Leyton, Essex. Third, A. Henderson, Pine Apple Place, Edgware Road.

Twelve PLANTS in flower, forced.

First, J. & J. Fraser, Lea Bridge Road Nurseries, Leyton, Essex. Second, W. Young, gardener to R. Barclay, Esq., Highgate. Third, W. Cutbush and Son, Highgate Nurseries.

Prizes, as under, were awarded to the following miscellaneous plants and flowers:—

First, W. Cutbush & Son, for collection of 50 vars. of Hyacinths. Equal ditto, A. Henderson & Co., for collection of Hyacinths and Tulips; W. Paul, for collection of 100 Hyacinths. Second, W. Cutbush and Son, for collection of 35 vars. of Narcissus. Equal ditto, J. Standish, for collection of 5 Camellias; W. Bull, for collection of new and rare plants; T. Todman, for collection of 6 Roses. Third, W. Paul, two boxes of cut Roses. Equal ditto, B. S. Williams, for collection of 13 miscellaneous plants; Rev. F. Beadon, North Stoneham Rectory, near Southampton, for three boxes of cut Camellias, grown in the open air. Fourth, Paul & Son, for a box of cut Roses. Equal ditto, F. & A. Smith, Dulwich, for collection of new and rare plants. Extra ditto, J. Salter, for two pots of variegated Lilies of the Valley.

THE ADVANTAGES AND DISTINCTIVE FEATURES OF THE MANETTI STOCK.

I WILL not enter upon the question, Which is the best stock, Manetti, or the Briar? Much depends upon circumstances. I should fancy that the Briar 2 feet high would be the most "convenient" for thoroughbred Rose lands, because Manetti Roses would generally grow up into pole Roses, which might be "inconvenient."

My Acidalies are between 9 feet and 10 feet high, and Paul's Victoria, apparently dead at the spring of the year, is now between 7 feet and 8 feet high. The great advantage of Manetti Roses is, that they will do "wonders," where the Briar Roses will do nothing, even with the best attention and highest cultivation.

It cannot be denied that some Roses here which do well on a Briar, do badly on Manetti, and *vice versâ.* However, I never knew one grow badly on Manetti that was of free growth and good constitution. Moreover, some (as the White Bath) which are tender, but of free growth, do well on Manetti, and better than they do on a Briar. Others, like Maroc, which are of free growth on a Briar, do badly on Manetti.

It appears to me that some of the Manetti Rose failures have occurred from placing unsuitable Roses on the stock. Suitability is the very soul of Rose prosperity. Each Rose, each soil, each season, is a law to itself. The Manetti stock sends up so much sap, that it requires a free grower to carry it off. Some spoil their Manetti Roses by cutting them and treating them as if they were Briar Roses, from which they differ in many particulars.

First. You cannot cut (for show purposes especially) a Briar Rose too hard, and you cannot cut a Manetti Rose too lightly; in fact, like a Hybrid Bourbon or Hybrid China, or strong-growing wall Noisette, merely taking off the tops, thinning out useless wood, and cutting the side wood in to a good eye are all that it requires.

Secondly. Briar Roses should, on an average of years, be cut according to circumstances, about the 15th of March, when the wind is in the south, or south-west. A Manetti Rose you may thin out after Christmas at the base, and you need not cut the tree in the main till after the whole of its flower-buds are formed. You will then see what, and where, to cut.

Thirdly. You can scarcely plant a Briar Rose (it should always be mulched unless your ground is "unctuous," and able to supply the roots with moisture by capillary attraction) too shallow; and you cannot plant a properly-propagated Manetti Rose too deep—*i.e.*, over the collar of the bud. The Manetti stock should never be exposed, as the sun stews the juice out of it, and it "rhynocerates" or becomes as dry as a walking-stick: hence it will not do for standards.

Fourthly. A Briar Rose makes roots slowly and sparsely; a Manetti stock makes them quickly and abundantly, and travels fast for food. The former is, therefore, more impatient of drought than the latter.

Fifthly. A Briar Rose should be manured in the winter, but a Manetti Rose needs not to be manured much till after you see what crop it is about to bear. As manure runs quickly out of my inferior grounds, I manure at all times; and no man does, or can, manure more highly.

These are some, and perhaps only some, of the points of difference.

Let me now, even at the risk of repetition, point out some of the advantages of Manetti Roses, properly propagated, properly planted, properly cut, and properly attended to at all times.

Firstly. For pot purposes there is nothing equal to it. How do men get their "novelties?"

Secondly, Manetti Roses when sick—yea, very sick—may be taken up and restruck and recovered. I never knew a sick Briar Rose ever thoroughly recover.

Thirdly. A Manetti Rose is more easily defended in hyperborean winters; and, even if it is killed to an inch from the point of union, it may become a mighty tree the same year. In the spring of 1861 I did not know but all my Duchesses of Orleans were dead, but they became noble plants, and were laden with abundant, continuous, and large first-class flowers, and they are now in good condition.

Fourthly. In able hands (I include a pennyworth of brains), Manetti Roses will do well in all lands, and in lands where it would be useless to plant a Briar H.P.

Fifthly. It is an earlier, later, more continuous, hardier, and more productive stock than the Briar in inferior lands.

Sixthly. The blooms come to perfection quicker, and are larger (here at least) than the same Rose would be on a Briar, planted by the side of the Manetti Rose. The blooms also are of a finer colour, and the petals more substantial. These things are no more than the natural issue of a stock so redundant in succour, and so quick to root.

Seventhly. The Manetti Roses, if planted over the collar of the bud, will probably become Roses also on their own roots; and if you, in due time, heal up 4 inches over the lower shoots they will also become Roses on their roots. I have taken off several of these from La Ville de St. Denis and others. I have no doubt that the great body of my Manetti Roses are double-rooted.

Eighthly. You may, with care, transplant them in your garden in August or September without detriment. The removal in gloomy weather stops the redundancy of sap, the tree takes again in a trice, and ripens its wood all the better. I have over a thousand Manetti Roses, and three years following I find that those which I bought of Mr. Gill, of Blandford, were planted the 10th of October. No Roses have ever done better. None can look better than they do at this moment. You may also plant them in spring with success weeks after you would dare to plant a Briar Rose.

These, then, are some of the advantages of Manetti Roses. It is remarkable what a mess propagators and cultivators have made of it between them. The propagators budding it too high, and the cultivators misunderstanding it at all points. I did the same once: my plants lasted "two years." They came to Blandford from Mr. Francis. Nobler plants I never saw. I have the same Roses that I "murdered" in hundreds, some of them 5 feet and 6 feet high, and a mass of efflorescence in the season, their stiff stalks being dragged down to the ground with the weight of flowers. Among the victims I remember were Géant des Batailles, Général Jacqueminot, Baronne Prevost, and Jules Margottin. Come and see them next summer about the 16th of June, and you will go home and buy a thousand, and I hope an equal quantity of "common sense."

I may add, that I bought some admirable Manetti plants of Mr. Rivers, especially Madame Louise Carique, the finest-habited new Rose and one of the most beautiful that has come out since Cambacères appeared. Had Manetti Roses always been budded as Mr. Rivers' and Mr. Gill's are budded (close upon the roots), this noble stock, so valuable in every respect, would never have wanted a defender, for, before the cultivator could have spoiled it, the Rose would probably have been established on its own roots, and out of harm's way.

I do not impugn for a moment either the motives or the experience of the opponents of Roses on the stock of Signor Manetti. It is but candid and truthful to say, that, except nurserymen and myself, I never met a person who did not suspect it to be a failure, or say that they disliked it. And yet these very men come and look at a patch of 425 Roses here in a place that was a "wild duck" pond, and say, that they never saw such a floral sight in their life.

I have said the stock is early. Last year it gave me twenty-four [illegible]nners on the 13th of June at Dorchester. Usually they begin about the 6th of June, and never stop one moment till frost and snow cut them off. I hope to be able to take some to Kensington, June 11th. I count upon sixty blooms of Solfaterre [illegible] own roots), and twenty-four trebles, or, at least, twenty-four singles; but, of course, without an early spring this cannot be [illegible]. I have rubbed out "impossible" [illegible] my dictionary, and, at [illegible] will have [illegible]

makes no difference here to Roses on the stock of Signor Manetti. For the last four years they have astonished me and every visitor. I have found what Mr. Rivers has said of Manetti to be true to a letter. Cut out the eyes from the stock and do not cut the plant hard, and you will not be pestered, as you are with Briar Roses, by suckers. I rarely ever see a Manetti sucker here. I never saw above one or two in my life from the roots, and very few from the stock.—W. F. **Radclyffe**, *Rushton.*

HARDY HERBACEOUS PERENNIALS.

(*Continued from page 173.*)

July.

Red, Scarlet, Crimson.

Chelone barbata coccinea, 4 ft.
Coreopsis diversifolia, 3 ft.
Geum coccineum, 2 ft.
Lilium martagon, 3 ft.
Malva Morenii, 4 ft.
Pyrethrum, The Duchess, 4 ft.
Spigelia marilandica, 1 ft.
Stachys speciosa, 4 ft.

White.

Aster linifolius, 2 ft.
Campanula persicifolia alba, 3 ft.
C. persicifolia alba flore pleno, 3 ft.
Epilobium angustifolium album, 4 ft.
Galega orientalis alba, 2 ft.
Lilium martagon alba flore pleno, 3 ft.
Linum monogynum, 2 ft.
Mitella nuda, 3 in.
Pyrethrum album plenum, 2 ft.
Spiræa barbata, 4 ft.
S. filipendula plena, 1½ ft.
Veronica virginica, 5 ft.

Yellow, Orange.

Achillea tomentosa, 6 in.
Aletris aurea, 6 in.
Centaurea macrocephala, 3 ft.
Coreopsis tenuifolia, 1½ ft.
Coronilla coronata, 2 ft.
Inula calycina, 1½ ft.
Iris caucasica, 6 in.
I. elegans, 2 ft.
Lilium aurantium, 3 ft.
L. tigrinum, 4 ft.
Lupinus californicus, 2 ft.
Lysimachia affinis, 1 ft.
Narthecium americanum, 4 in.
Œnothera prostrata, 6 in.
Potentilla insignis, 2 ft.
P. reptans flore pleno, 3 in.
Rudbeckia fulgida, 3 ft.
Solidago minima, 6 in.

August.

Red, Scarlet, Crimson.

Betonica serotina, 1½ ft.
Chelone Lyoni, 3 ft.
C. speciosa, 4 ft.
Oxytrapis leptophylla, 6 in.
Phlox disticha, 5 ft.
P. glaberrima, 3 ft.
P. pyramidalis, 5 ft.

White.

Clematis hybrida, 3 ft.
Dianthus superbus, 2 ft.
Hemerocallis japonica, 1 ft.
Phlox paniculata alba, 3 ft.
P. Sickmanni, 2 ft.
P. suaveolens, 1 ft.
Silene pilosa, 1 ft.
Spiræa Humboldtii, 4 ft.
Veronica longifolia alba, 3 ft.

Yellow.

Bupthalmum cordifolium, 1 ft.
B. auriculatum, 5 ft.
Coreopsis grandiflora, 3 ft.
C. verticillata, 3 ft.
Inula glandulosa, 2 ft.
Potentilla crocea, 6 in.
P. fruticosa tenuiloba, 1½ ft.
Rudbeckia columnaris, 3 ft.
R. Newmanni, 2 ft.
Solidago alpestris, 1½ ft.
S. canadensis, 3 ft.
S. fragrans, 3 ft.
S. gigantea, 6 ft.
S. serotina, 5 ft.

Blue, Purple.

Campanula aggregata, 2 ft.
C. macrantha, 3 ft.
Delphinium Wheeleri, 3 ft.
Dracocephalum sibiricum, 1 ft.
Gentiana septemfida, 1 ft.
Statice elata, 1 ft.
S. Thouinii, 1 ft.

September.

Red, Scarlet, Crimson.

Aster Novæ-Angliæ rubra, 6 ft.
A. bellidiflorus, 3 ft.
Lobelia cardinalis, 3 ft.
L. fulgens, 3 ft.
L. splendens, 3 ft.
} require protection.

White.

Aster albus, 3 ft.
A. bessarabicus, 3 ft.
A. ciliatus, 3 ft.
A. conyzoides, 1 ft.
A. hispidus, 1 ft.
A. humilis, 9 in.
A. multiflorus, 3 ft.

Yellow, Orange.

Solidago altissima, 4 ft.
S. sempervirens, 5 ft.
S. viminea, 3 ft.
S. virgata, 2 ft.

Blue, Purple.

Aster elegans, 2 ft.
A. canescens, 2 ft.
A. floribundus, 4 ft.
A. foliolosus, 3 ft.
A. tardiflorus, 2 ft.
Liatris elegans, 4 ft.
L. pumila, 1 ft.
L. spicata, 1 ft.
Linaria purpurea, 1 ft.
Lobelia glandulosa, 2 ft.
L. polyphyla, 4 ft.
L. syphilitica, 2 ft.

October.

Red, Scarlet, Crimson.

Aster præaltus, 6 ft.
A. tenuifolius, 5 ft.
Colchicum autumnale rubrum, 6 in.
C. autumnale rubrum fl. pleno, 6 in.
Cyclamen europæum, 6 in.

White.

Aster diffusus, 2 ft.
A. eminens, 2 ft.
A. longifolius, 3 ft.
A. radula, 2 ft.

Yellow.

Chrysocoma linosyris, 2½ ft.
Solidago recurvata, 2 ft.
S. speciosa, 4 ft.
S. tenuifolia, 2 ft.

Blue.

Aster blandus, 2 ft.
A. concolor, 1 ft.
A. coridifolius, 1 ft.
A. graminifolius, 2 ft.
A. strictus, 2 ft.
Crocus autumnalis, 4 in.

November.

White.

Aster laxus, 2 ft.

Yellow.

Bidens procera, 6 ft.

Blue.

Aster grandiflorus, 2 ft.
A. patens, 2 ft.

The list we have published is enough for a large plot of the garden; but of course the owner may reduce the number, or [illegible] pleasure. [illegible] a great [illegible]nience to stock of each species in a reserve garden, for the purpose er changing the plants or adding to them when it may be t advisable. The point to attend to in planting is to ute the species so that the times of blooming may be over the whole border or borders; then, in viewing them would always perceive in as moderate a space as possible ro, or more plants in flower. In order to afford a guide mple how to manage the planting, I have selected from as many plants as would furnish a border 36 feet long. ample might, of course, be repeated to any length. The ow at a foot apart would hold thirty-six plants; the next, oot distance, twenty-four plants; and the other two, at apart, twelve plants in each: thus it will be understood ghty-four kinds would furnish a border 36 feet in length. ader will observe that I have used scarcely any of the amily of Phloxes or Iris, and several others—in fact, f these richly deserve a border to themselves. If thought le, the front row might have a batch of Crocuses and rops between each of the permanent plants with a good n early spring.

st this attempt at classing in colours, heights, and the f flowering of herbaceous plants will be received with due nce. No doubt it might be greatly improved, and I should l to see our old-fashioned flowers once more have a pro- place in our gardens.

ST Row, 3 inches to 9 inches in height; 36 plants 1 foot

yramidalis, Blue, May.
ra prostrata, Yellow, July.
flore pleno, White, April.
en coum, Red, February.
a (double Blue), Blue. April.
orniculatus fl. pleno, Yellow,

ne alpina, White, May.
a (double Red), Red, April.
inia speciosa, Blue, June.
thus Marshallii, Yellow, May.
ium macranthum, White, Apl.
lium dioicum, Red, May.
ula pumila, Blue, July.
n saxatile, Yellow, May.
ra taraxacifolia, White, July.
erna, Red, April.
ia purpurea, Blue, May.
s hyemalis, Yellow, February.

Mitella diphylla, White, April.
Dianthus alpinus, Red, June.
Gentiana acaulis, Blue, May.
Achillea tomentosa, Yellow, July.
Anemone multifida, White, June.
Colchicum autumnale rubrum, Red, October.
Prunella grandiflora, Blue, August.
Thalictrum alpinum, Yellow, June.
Ajuga reptans alba, White, April.
Sedum roseum, Red, June.
Gentiana septemfida, Blue, August.
Caltha palustris plena, Yellow, May.
Campanula pumila alba, White, July.
Silene Schafftii, Red, April.
Crocus autumnalis cœrulea, Blue, Oct.
Convallaria aurea, Yellow, May.
Cornus suecica, White, March.
Dentaria bulbifera, Red, April.

OND Row, 1½ foot to 2 feet; 24 plants 1½ foot apart.

gia Skinneri, Red, May.
monogynum, White, July.
kia Newmanni, Yellow, Aug.
ula speciosa, Blue, May.
occineum, Red, July.
xus, White, November.
lmum salicifolium, Yellow,
st.
ium grandiflorum, Blue, June
a spectabilis, Red, May, June.
s superbus, White, August.
is tenuifolia.
ellata, Sept.

Aquilegia formosa, Red, June.
Asphodelus ramosus, White, May.
Lupinus californicus, Yellow, July.
Pulsatilla verna, Blue, May.
Lychnis fulgens, Red, July.
Ranunculus aconitifolius, White, May
Coronilla coronata, Yellow, July.
Aster grandiflorus, Blue, September.
Ononis spinosa, Red, July.
Aster eminens, White, October.
Trollius americanus, Yellow, June.
Aster concolor, Blue, October.

RD Row, 3 feet; 12 plants 3 feet apart.

s polyphyllus, Blue, July.
is lanceolata, Yellow, Aug.
ngifolius, White, October.
martagon coccineum, Scarlet,

odorata, Blue, September.
hus grandiflorus, Yellw, July.

Chelone mexicana, Red, June.
Delphinium formosum, July.
Tritoma media, Yellow, October.
Clematis hybrida, White, August.
Papaver pulcherrimum, Red, May.
Aster multiflorus, White, Sept.

K Row, 4 feet to 5 feet; 12 plants 3 feet apart.

barbata coccinea, Red, July.
candidum, White, June.
o sempervirens, Yellow, Sept.
m Halleri, Blue, June.
ovi-Belgii rubra, Red, Sept.
um angustifolium album,
e, July.

Lilium tigrinum, Yellow, August.
Delphinium speciosum, Blue, July.
Aster præaltus, Red, October.
Spiræa barbata, White, July.
Bidens procera, Yellow, November.
Liatris elegans, Blue, Sept.

T. APPLEBY.

HYACINTH AND CAMELLIA SHOW

THE ROYAL HORTICULTURAL SOCIETY'S GARDENS.

an admirer of both those flowers, and I am a Fellow of ciety as much from my admiration of florists' flowers as nything else; and I write to you, therefore, in my own and in the name of hundreds who wished to see the nths and Camellias but could not see them, to protest t the exhibitions being held in such a small room as was yed on the 19th. Never was a greater want of judgment than on that occasion; and if repeated, joined to other stances, it will justify the suspicion that the old influence still predominates, and that there is less care for floriculture than for botany.—HORTULANUS.

[There cannot be two opinions upon the fact that the Council-room employed for the Show was far too small for the purpose; and we will not defend the judgment which decided that such a room was large enough for such an Exhibition in the height of the London season. Much of the inconvenience might have been avoided, had the turnstiles been placed in the grand entrance, and the north door of the Council-room had been opened for admission, leaving the garden front for the exit. We are glad, notwithstanding, that the Show was not displayed in the conservatory, for that is now an exhibition of itself—the semicircular baskets, forming a beautiful crenulated border round the interior, are charmingly furnished, and would have been obscured if the Show had been held there.

The experience of the 19th warns the Council of what must be done—a part of the arcade must be glazed and otherwise fitted up, so as to render it a comfortable and sufficiently extensive site for exhibitions; but with the glazed ends and side so provided with doors as to admit of very ready ingress and egress. We cannot agree with you that there is any disposition on the part of the Council to encourage botany at the expense of floriculture. This Exhibition was itself an evidence to the contrary. —EDS. J. OF H.]

HYACINTHS.

MESSRS. W. CUTBUSH & SON'S, HIGHGATE.

MESSRS. CUTBUSH'S Hyacinth Show is one of the sights of London which all persons who take an interest in flowers ought to visit. This spring the display is even more magnificent than usual, comprising not only a vast collection of the best established sorts, but also a large number of those which are either quite new or less generally known than their merits deserve.

The Exhibition is held in a large lean-to house resembling the letter L in shape, and covered with tiffany, excluding the sun's rays, but admitting an abundance of light. The back wall of the house is entirely concealed by a mass of flowering plants—such as Camellias, Azaleas, Deutzias, Heaths, Pelargoniums, Cinerarias, &c.; then comes a row of early Tulips, chiefly yellow and scarlet, arranged alternately, but varied by the introduction here and there of other colours; whilst the base of the stage is occupied by Roses in bud, and Cyclamens, the whole being edged with Mignonette, which communicates a delightful fragrance to the already perfumed air. Hanging at intervals from the roof are wire baskets gay with Tulips and Hyacinths, giving the whole a light and graceful appearance, and serving to relieve the dense mass of plants with which the stage is crowded.

Turning to the other side the eye encounters, springing as it were out of a quiet mossy carpet, three broad ribbons of colour running all round the house, the effect of which when viewed from the farther end is very striking. This is the great feature of the Show, all the rest of the plants being merely introduced to heighten the general effect.

The bloom was in splendid condition, the spikes being almost without exception large and well clothed with bells, and the colours well developed.

Among the *Double Reds*, conspicuous for size and colour were the new sorts, Koh-i-Noor, with quite a mass of bells, and Susannah Maria, both of which fully justify the high character that they have been reported to possess. These with the Duke of Wellington, which is decidedly the finest of the pale reds, and Noble par Mérité, are evidently the best of their class; Milton, with large deep red bells, is likewise an excellent variety; Regina Victoria, rosy pink, one that is good and distinct.

In *Double Whites*, La Tour d'Auvergne, with its large and handsome bells, and Prince of Waterloo, here as elsewhere maintain their pre-eminence as the best and purest of their colour; the former variety was, however, not in full perfection. Sir Bulwer Lytton, a new kind, has large and very curiously-formed bells, slightly tinged with purple at the eye.

Of the *Double Blues*, Laurens Koster, with long dense spikes of dark indigo blue remains the finest of its colour; Prince of Saxe Weimar is another excellent dark blue both for size of spike and colour; Paarlboot, with its pearly blue extremely double bells was particularly fine; and so were Garrick, light blue with a broad purple mark down the centre of each petal; and Sir Colin Campbell, with large bells of a light shaded blue. Van Speyk, with immense very double bells, is another decidedly first-class sort.

In the *Single Reds*, Cavaignac was remarkable for its immense spike and bells, of a salmon colour striped with deep rose; La Dame du Lac, pale rosy pink, was also very good: Lady Sale, deep red; Lina, bright crimson; and Monsieur Feasch, almost scarlet, are excellent; Mrs. Beecher Stowe, with closely-arranged rosy pink bells, is decidedly one of the finest of its class; Princess Charlotte, shaded soft rosy pink, is an improvement on La Dame du Lac, possessing very large bells closely arranged; Macaulay, vivid crimson; and Howard, orange crimson, are new and fine; Princesse Clothilde, another new variety is much in the way of Mrs. Beecher Stowe, with an immense spike about 7 inches in length, and bells of a pale pink striped with crimson carmine, very closely arranged; Pelissier, with large crimson scarlet bells, is also new and fine; Diebitz Sabalkansky and Solfaterre with their brilliantly-coloured flowers, those of the latter with very large bells; Sultan's Favourite, with pink-striped flowers; and Von Schiller, with dense salmon pink bells, were among the gems of the Exhibition. Reine des Jacinthes, crimson; and Victoria Alexandrina, intense crimson, are two new and handsome varieties, the latter decidedly of the first merit.

Single Lilacs.—The best of these were:—Honneur d'Overeen, deep mauve, very close; Prince of Wales, fine mauve, large spike and bells; and Haydn, lilac magenta, very large spike. All three new and first-rate sorts.

In *Single Whites*, among other fine varieties, were Elfrida, a beautiful creamy blush, very handsome and of great substance; Gigantea, deep blush, with faint stripe down the centre of each petal; Grandeur à Merveille, a dense mass of pale blush bells; Madame Van der Hoop, with superb spikes and bells; Mont Blanc, very fine; Orondates; and Tubaflora, very handsome, blush, with reddish-purple marks on the tube. But there are two others which, apart from their novelty, are particularly worthy of notice—viz., Miss Burdett Coutts, a beautiful creamy blush of great substance, with bells of altogether extraordinary size—larger, indeed, Mr. Cutbush says, than those of any other Hyacinth with which he is acquainted; the other is Snowball, pure white, with very large bells of great substance, and in form almost circular, approaching more closely to the *beau idéal* of a florist's Hyacinth than any other variety. It, therefore, promises to be the parent of a new race.

Single Blues present less of novelty, though the best sorts are well represented. Argus, with its conspicuous white eye, was very handsome; Baron Von Tuyll; Bleu Mourant; Charles Dickens, remarkable for its splendid spikes; Grand Lilas; and Von Humboldt, deep purplish-blue, approaching to black, and therefore, one would imagine, more properly belonging to that class, were all deserving of the highest commendation.

In the *Single Black* class, Blackbird was noticeable as being the darkest of all; General Havelock, with its large and close spike, was well worthy of the hero after whom it is named; La Nuit, deep purplish-black, has a good close spike; and Prince Albert, very dark, is a variety of great excellence.

Single Yellows are not a numerous class, nor are they so attractive as their more brilliant neighbours. Still, exception must be made in favour of Ida, bright yellow, well clothed with bells; and Victor Hugo, of a finer colour than Ida, but not so large. Duc de Malakoff, orange, striped with carmine; and Aurora, orange, faintly striped, and having the back of the bells splashed with carmine, are also two very good new varieties.

There were many more varieties of great beauty, and, perhaps, some novelties that escaped our notice, but the above comprise the kinds that appeared most remarkable, either on account of their recent introduction or established merit.

It is only justice to say that the whole Exhibition reflected the greatest credit on the taste and skill of Messrs. Cutbush; and if any one accustomed to the miserable specimens of Hyacinth culture too often to be met with, even in gardens of some pretensions, suspects that we have spoken too highly of the display at Highgate, let him go and judge for himself. Even if he derive no benefit from the example of successful cultivation which will there lie before him, he [illegible] at least [illegible] tasted [illegible] that leaves [illegible] behind.

[illegible] Fibre Refuse.—We have now been using [illegible] fibre refuse for the last twelve months, and have a ridge of it, [illegible] has been nearly two years in the heap, and now [illegible] condition for mixing with other mould for pot- [illegible]

TREATMENT OF PEACH TREES IN BLOOM UNDER GLASS.

I AM in a great strait between two garden doctors, who cannot agree respecting the treatment of a Peach tree on the back wall of my vinery. The tree, at the present time, is in full blossom from the top to the bottom; and, according to the advice of one of the doctors, I am keeping the roots without a drop of water, and have done so all the winter. He says, should I water, the blossoms will all drop off without setting. Now for the other doctor, who tells me to pursue just the contrary course of treatment—that if I do not water, all my blossoms are doomed, and that I ought to have done so occasionally during the winter months.

Pray assist a poor unfortunate amateur, who, between two stools is sure to come to the ground, besides the mortification of losing all the fruit.—S. S. S.

[You would see the matter referred to last week. If the soil is very dry, and the roots have not gone deep—very undesirable, the bloom will be apt to drop from dryness. We should have given a little at a time, making small holes, as soon as the buds began to swell freely; even now we would advise that course. A great drenching all at once, from the sudden stimulus, would be as dangerous as great dryness. We can see an advantage in such deciduous trees being dryish, not dry, when in a state of rest; but we can see no reason why the soil should be so dry when the trees are in bloom, though we do see reason why the atmosphere should be rather dry then. The trees will not long flourish if destitute of water at the roots; and in this dry state, a great drenching at the roots will be apt to cause the fruit to be pushed off at any time.]

EARLY SPRING FLOWERS.

I HAVE noticed the desire of some of your subscribers to have a list of spring flowers. I enclose a list of those now (March 20th) in bloom in my garden at Wilmslow, near Manchester. Those having an asterisk affixed were in bloom on the 5th of February.

I should be glad to be informed if there be any other flowers which naturally bloom at this season or earlier.

Crocus, yellow*, white, purple, striped; Snowdrop, single*, double; Rhododendron; Erica cinerea; Christmas Rose*; Mezereon Pink, dark red; Andromeda floribunda; Wallflower*; White Alyssum; Pansies*; Hepatica, white, blue, purple*; Grape Hyacinths; Daffodils; Violets; Aubrietia alba,* purpurea; Polyanthuses*; Primrose, purple; Cowslip*; Dog's-tooth Violet; Bulbocodium vernum*; Scilla, blue,* white; blue Hyacinth.

Thirty-two sorts in blossom 20th March.—A CONSTANT SUBSCRIBER.

AN EVERGREEN CYCLAMEN.

CYCLAMENS of various kinds, colours, and characters, of late have been described through the pages of my weekly companion, THE COTTAGE GARDENER—the old title like old friends, hard to call them by another name. However, it is the name I want, and to increase my Cyclamen which has been in my possession three years. Its greatest curiosity is, that it has been in bloom more or less for the last two years and six months, reminding me of an inscription I once saw on a tombstone—viz., "Say what a wife ought to be, and she was that." Say what a Cyclamen ought to be, and mine is that, always growing and blooming. Well, to describe it as near as I can. Its roots I cannot say anything positively about, for I made no memorandum of them when I received it from the hands of my worthy and present employer. The bulb was sound and fresh, of a dark brown colour, about the size of a walnut, but reminding me at the time of being a peculiar shape—neither round nor yet oval, but a one-sided affair. However, after potting and several weeks' anxious attention it started into growth, apparently two leaves coming from one side of the bulb, but to my surprise it was a leaf and a flower hand-in-hand together, and so it has continued to this day, with the exception of the flowers: when withered they gradually decay down to the gouty stem, which is more than an inch high. The leaves remain on for a whole season. The flower in size is midway between the Cyclamen persicum and coum; petals broad, and of a rose pink, with a dark purple [illegible] delicious; flower-stem slender and of an average length of 5 inches; young leaves slightly toothed, of a pea-green colour, with a beautiful marble-like mark; under side of the leaf is a most beautiful reddish-purple, when full grown 1¼ inch in diameter and heart-shaped; leafstalks slender and 2 inches in length, and when fully developed hang below the level of the gouty stem from whence they spring. It has also made a second stem from the base of the first, growing at present horizontal, producing a leaf and a flower as in the first. The reason why I have not made inquiries before is, I do not like to give up until I am fairly beaten, and not always then; but I must in this case, for I have tried every bloom, and a pod of seed I cannot get. The side shoots I am afraid to take off, and being anxious to increase it if Mr. Beaton will be my legal adviser it will be gratefully received and oblige—J. Holland.

P.S.—I may state the plant is in beautiful health, having thirteen leaves, three flowers, and several coming, but I am very reluctant to cut a leaf or flower. Living so handy the whole may be seen, otherwise I would have sent both leaf and flower.

[This is, in fact, an evergreen Cyclamen. It was exhibited at South Kensington by Mr. Holland, a well-known exhibitor and successful raiser of superior crosses of popular flowers, and I had it in my hands to smell. A Violet is not sweeter. The plant has the same kind of spur as vernum, and as the europœum which the gentleman dug up in Savoy and sent me one, and also like my vernum. It is making a side-spur at the side of the tuber. But what is it? It is not described in any book I know, and I had a walking encyclopedia the other day by the button-hole—Mr. Gordon, who grew them all at Chiswick for years, and also described them with all their aliases better than any one else. Yet he does not know this kind. Mr. Holland is a splendid grower of Cyclamens. I never saw such leaves of them as he sent to the Show, and we both agreed that any kind of them which is difficult to seed ought to be treated like the Chinese Primrose for the same purpose.—D. Beaton.]

NEW BOOKS.

The Ailanthus Silkworm and the Ailanthus Tree, by Lady Dorothy Nevill. London: "Journal of Horticulture" Office, 162, Fleet Street.

There is no one in this country who understands the habits and management of the new Chinese Silkworm so well as Lady Dorothy Nevill, whose book on the subject is now before us. Unlike the true Silkworm (*Bombyx mori*) this new species is extremely hardy, and has been found to succeed perfectly out of doors, without anything more than ordinary care being given to the worms. They may be turned out to pasture, as it were, on the Ailanthus trees without perishing by the vicissitudes of our climate, or being carried off by the rapacity of birds, as is the case with the other species. That the rearing of these worms will become a favourite occupation among us there cannot be a doubt; for, besides the mere fact of their producing an abundance of silk, the moths themselves are so large and beautiful as to make them an object of attraction. The way in which Lady Dorothy has performed the task she has assigned herself is most meritorious; and as she writes entirely from experience, and as confirming the experience of some of the most extensive breeders of these worms in France where they are produced very extensively, the greatest reliance is to be placed on the information her ladyship communicates.

A Supplement to "Gordon's Pinetum:" containing descriptions and additional Synonymes of all the Coniferous Plants not enumerated in that work, with corrections up to the present time, by George Gordon, A.L.S. London: Henry G. Bohn.

If the appearance of the "Pinetum" itself was welcome, that of the Supplement is equally so. Before Mr. Gordon published that which has proved so valuable a text-book, both to country gentlemen and to nurserymen, there was no work in the English language which had been specially devoted to the subject of Conifers. For four years it has now been in the hands of the public, and we may safely say there are few who have had occasion to consult its pages who would willingly be deprived of the privilege of doing so. Since its publication, however, many new Conifers have been discovered and introduced, many reputed distinct species have been proved to be synonymous with others previously described, and misconceptions regarding others have been ascertained. All these, and much more, have been introduced into the Supplement, and we have now a very useful and valuable addition to our knowledge of this beautiful family. Mr. Gordon has done good service by reducing those fanciful species of Pinus which Roezl sent from Mexico to their proper places. Nor does he confine himself to botanical matters alone, but throughout the work we meet with much that is of a popular character, as for instance, the following remarks on the Araucaria imbricata:—

> "Dr. Pœppig says, such is the extent of the Araucarian forest, on the Chilian Andes, and the amazing quantity of nutritious seeds that each full-grown tree produces, that the Indians are ever secure from want; it yielding to those nomade nations a vegetable substance, that is found in greatest plenty the more they recede from the whites. The kernels are dried after being boiled, for winter use; their time of ripening being towards the end of March, at which time the cones break up and fall to pieces, shedding their seeds on the ground, and thus bestowing a great boon on the poor Indians, which nothing but a small parrot divides with them. The Araucanians eat the nuts either fresh, boiled, or roasted, and distil from them a kind of spirituous liquor, and prepare a kind of flour and pastry from them, or dry them for winter store, and for trading to Valparaiso or Lima, where large quantities are consumed annually by the people. And there is but little doubt when the numerous young Araucarias which are now planting, or have been planted in Europe, become large, and arrive at a fruit-bearing state, but that as great a boon will be given to future generations as that conferred on the present one by the fruit of the Spanish Chestnut, which is now so largely consumed in all the towns and cities of Europe.
>
> "The Chili Pine was first introduced into England by Mr. Menzies, in 1795, and presented to Sir Joseph Banks, who planted one of the first plants at his residence, Spring Grove, near Hounslow, and sent the others to the Royal Gardens at Kew; and from which circumstance it formerly was called Sir Joseph Banks' Pine."

This is a work which must be in the hands of every lover of Conifers.

THE BIRMINGHAM ROSE SHOW.

A meeting of gentlemen desirous of establishing an annual Exhibition of Roses in Birmingham, open to all England, was held in the Committee-room of the Town Hall on the 13th of March. The Mayor (H. Manton, Esq.), presided, and there were also present the Rev. P. M. Smythe (Solihull), Messrs. T. B. Wright, John Lowe, C. L. Browning, F. Walton (St. Cuthbert's, Albrighton), G. P. Tye, J. Cole, James Clements, J. B. Gausby, J. Cranston, J. T. Brown, jun., B. A. Hallam, and E. W. Badger.

The Mayor having briefly opened the proceedings, Mr. E. W. Badger, one of the Hon. Secretaries, read letters from Mr. Thomas Rivers, Sawbridgeworth; the Rev. C. H. Bulmer, Credenhill Rectory, Herefordshire; Mr. Richard Smith, and Mr. Archibald Wood, of Worcester; Messrs. James Dixon and Sons, Newton Nurseries, Chester; Mr. Samuel Evans, of Arbury (C. N. Newdegate, Esq., M.P.'s head gardener); Mr. Charles Kimberley, of Stoke, near Coventry; Mr. Charles Turner, Royal Nurseries, Slough; Mr. William Paul, Waltham Cross; Mr. John Cranston, King's Acre, Hereford; and Mr. C. J. Perry; all of whom sympathised heartily with the movement, and expressed their regret that they could not attend. Mr. Badger also read extracts from two letters from the Rev. S. Reynolds Hole, Caunton Manor, Newark, the founder of the National Rose Show, in which that gentleman intimated that he would gladly afford to the Committee the experience he had gained from the superintendence of the great metropolitan shows. He also stated, in reference to an advertisement he had published inviting communications from persons interested in the establishment of a Midland or Northern Counties Rose Show, that at that time he was unaware of the projected Birmingham Show; but now, being quite convinced that two Midland Shows were unnecessary, he should propose to all his midland friends to join him in co-operating with the promoters of the Show at Birmingham. He, however, added that he should take steps to establish a Northern Rose Show, and then all Rose-growers in England would have ample opportunities afforded them of showing or seeing the queen of flowers in her beauty.

Finally it was resolved,

> "That this Meeting cordially approves of the proposal which has been made to establish in Birmingham an annual Exhibition of Roses, and Garden Ornaments, and of Horticultural Tools, open to all England, and is prepared to afford its co-operation in whatever may be necessary to promote the success of such Exhibition."
>
> "That in order to carry out the foregoing resolution, the following gentlemen (about sixty) be and are hereby appointed a Committee of Management for the present year, with power to add to their number, and to fix the time for holding the first Exhibition; to prepare and circulate a prize list and regulations, and generally to conduct the business of the Show; and that the Mayor of Birmingham be the Chairman of the Committee, and Mr. T. B. Wright, Vice-Chairman."
>
> "That Mr. John Shakel be respectfully requested to accept the office of Treasurer for the present year."
>
> "That Mr. B. A. Hallam and Mr. E. W. Badger be respectfully requested to act as the Hononary Secretaries for the present year."

GREENHOUSE WITH WET SOIL.

A constant run of water, though carefully carried off by drain-pipes under the floor of my greenhouse, causes such a supply of moisture when evaporated by fire heat, as to render the sash-frames mouldy. At present the ground is covered with a good layer of coal ashes, constituting the whole flooring, except the path, which is tiled.

Can you tell me how to prevent the excessive rise of moisture? Would the end be attained by covering the coal ashes with a concrete made, say, of one part Portland cement, and three parts gravel? I am not sure if this would be perfectly waterproof. Any mixture with tar would make an intolerable smell. I find woodlice abound in the ashes of the floor. Can I destroy them and prevent their reproduction by a good watering with a solution of sulphate of zinc or other strong poison?—M. H.

[We think your best plan would be to make the joints of your drain-pipes secure with Portland cement, or, if a barrel drain, to cover that with the same. We have a strong suspicion that the mouldiness of the sash-frames is more the result of want of air in dull weather than the mere evaporation of water from the drain, and we come to this conclusion from so many woodlice being among the ashes, as they do not like a damp place by any means. We think your saturating the ashes with any liquid, poisonous or otherwise, would increase the moisture in the atmosphere of the house, and would not kill the woodlice. If you did so water, and left a part of the sides dry, and put a little dry hay along there, you might pour boiling water on them on moving the hay in the morning. You could make a floor impenetrable to water by laying down 3 inches of concrete made as lately described in "Doings of Last Week," leaving the surface a little rough, and then covering smooth with half an inch of Portland cement, with nearly as much of clean, rough sand mixed with it as it was laid down. But though we do not think any damp would rise through such a floor, neither do we think that any would go down through it, but that every drop of water spilled would remain. As said at first, a little more heat and more air would cure what you complain of. The glass of all cool houses needs washing at times.]

THE CHALLENGE ACCEPTED.

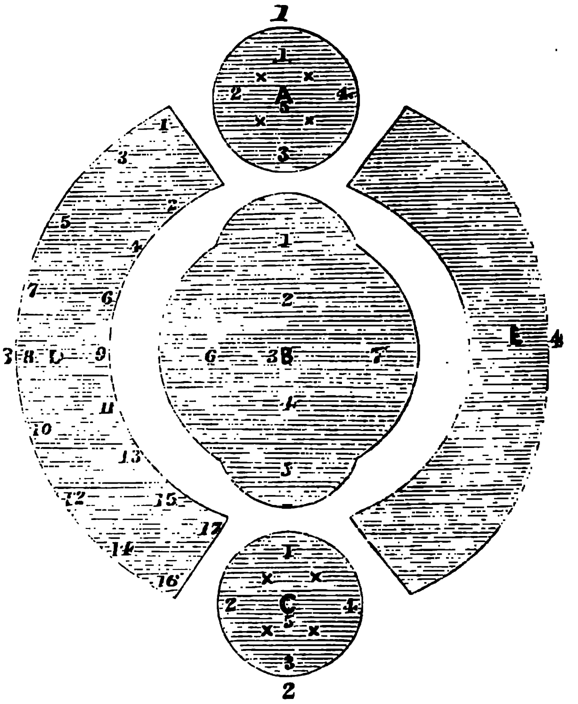
I accept "A Nurseryman's" acceptation of my challenge. But I should have done so with the greater thankfulness if he had offered to send me Madame Furtado, and five more new Roses just as good as Madame, if there are so many of that style and stamp in his catalogue. Then, if I had to submit to having my head shaved, such Roses would pay me for the crop. As it is, two good, healthy, vigorous Pontic Rhododendrons will be quite sufficient, each of them must have at least four shoots of last summer's growth, not less than one foot long each. After disbudding the four shoots or more, I shall give one of the plants to Mr. Eyles to prove, and keep the other one myself. When I lost the Experimental Garden, my mantle, by common consent, fell to Mr. Eyles' lot, and I know of no one who is more likely to do what is just and proper for both the challenger and "A Nurseryman." Then, if I lose my crop, I shall prove the chaff—prove if Rhododendrons will grow twice as much in the cocoa-nut refuse as in peat, and I shall know more to the bargain than any physiologist in Europe could tell me now.—D. Beaton.

SPIRÆAS IN GEOMETRIC BEDS.

Until I saw the Spiræas here, I had no conception that they could be clumped in such effective masses, and made to break a flat surface with so charming a result, and my master tells me he derived the original idea from the paper on Spiræas in your Number for February 27th, 1851.

I enclose you a plan of beds designed to give full effect to the contrasting colours and habits of growth of the several shrubby Spiræas, which have attained here the height of 4 feet and 5 feet in many cases, and produce a fine, bold break in the flat parterres around the clumps. I purpose this year edging these clumps with Scarlet Geraniums and Pentstemons.

We have here more than two hundred dwarf standard Apple trees of all the best kinds, never exceeding 7 feet in height, and pruned close. They bear in good seasons about four score of Apples each tree. They all are planted 4 feet from the Box-edge of the kitchen-garden walks, with single [illegible] the di[illegible] [illegible] along every path; and thus, whilst the heavy seaside winds here do not blow off our fruit, both Apples and Strawberries are picked without walking over the vegetable-beds, and this plan further gives diversity to the aspect of the flat area of the circumjacent garden.—T. Vickary, *The Pavilion, Aldwick.*



A. Five Spiræa bella, rose-coloured flowers.
B. 1, 3, 5, Spiræa ulmifolia. 2, 4, 6, 7, Spiræa ariæfolia.
C. Five Spiræa salicifolia, pink flowers.
D and E beds planted quincunx-fashion with equal proportions of the pink and white Spiræas, chamædrifolia, sorbifolia, prunifolia, Lindleyana, opulifolia, incarnata, and others of the same class of plant, and all are beautiful either in leaf or flower, mass well, and stand well in exposed places, with the great advantage of coming early into leaf also, until they assume a somewhat large, bushy form. The angles between the Spiræas can be filled-in with two-feet-high plants of that hardy Fuchsia the Riccartoni, of which we have hedges formed here bordering our walks, and which we do not cut down even in winter.

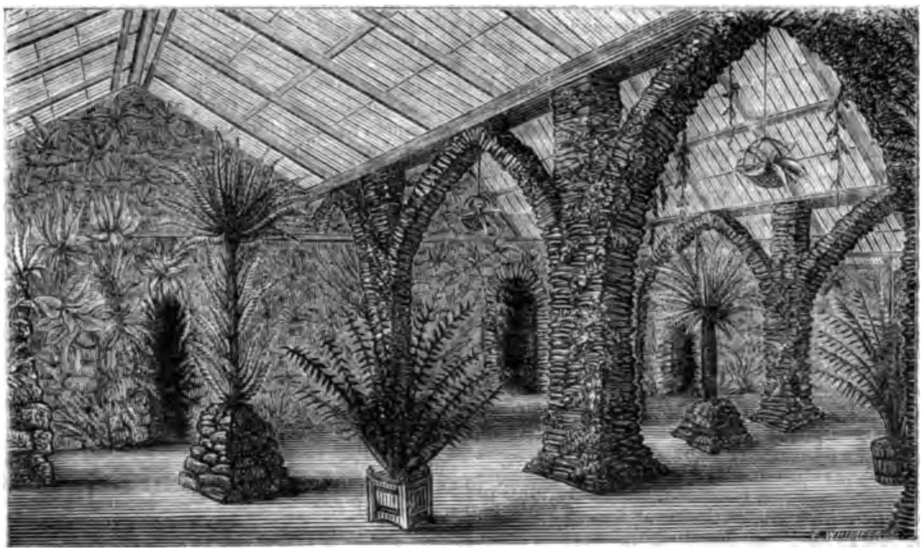
Detail Measurements of above Design.—From 1 to 2, longitudinally, 70 feet, and from 3 to 4, transversely, 56 feet. The circular beds, A C are each 16 feet in diameter, and the oval-shaped central bed, B, is 36 feet long by 26 feet broad, whilst the broader gravel walk round the centre bed is 4 feet wide, and the others 2 feet wide, exclusive of the Box-edging in each case, which surrounds all the beds, 4 inches high, and bushy throughout.

[This idea is so good that we have had the plan of it engraved. But there is an error of principle in the planting which might easily be altered in the present garden, and avoided in another. The idea is that of planting Spiræas in masses—say the best flowering ones. Since the Linnæan system of arranging plants has been superseded, massing particular families of plants has been done on the natural system. So called then, on the natural system Spiræa sorbifolia, and S. Lindleyana, should not be planted along with any other species of the genus, because they break the natural resemblance of the rest, the one from the other, and so the effect of natural affinity is neutralised. The Sorb-like Spiræas should never, therefore, be planted with a mass of other Spiræas, being as different in their looks as Larches are from the Ash. We would advise that Spiræa callosa and Nobleana should be substituted for sorbifolia and Lindleyana. From what Mr. Beaton has written to us about the bedding of Spiræas at Kew, and of the appearance of various forms of Spiræa Nobleana from seeds there, we should be inclined to look for improved sorts of that family from the seeds when masses of the best of them are grown together as has been done in this instance. Where Fuchsia Riccartoni makes permanent hedges like the nine-feet-high hedges of it which we once heard of near Belfast, the seeds of Spiræa would surely ripen. Yet, when the Spiræas are out of bloom the two referred to are the best-looking of the family, and we have pointed out long since the desirability of [illegible] standards of Lindleyana

A FEW DAYS IN IRELAND.—No. 18.

ROCKVILLE, BLACKROCK, DUBLIN.

(*Continued from page* 502.)



We now come to the orchard-house, which, however, is supplied with enough of piping to keep out frost, and therefore might more properly be called a fruit-house. It is one of the finest things of the kind that have sprung from Mr. Rivers' writings and practice; it is a very substantial as well as elegant affair, and is 84 feet long by 60 feet wide, the roof being formed of three spans, of which the centre is the highest, and the slope on the outside on each side longer by 3 feet or so than the others. The dotted lines in the section, p. 477, will represent the orchard-house without showing the furrow-plates, and the heavy lines will represent a section of the Fern-house. The height to the central ridge of the fruit-house from the floor level is 16½ feet, to the side ridges 15 feet, to the furrow-plates 10 feet, outside between 8½ feet and 9 feet; and as the paths are sunk 2 feet below the ground level, the glass that comes down on the sides to the ground level will, after allowing for sill and wall-plate, be from 6 feet to 7 feet in height. There are sashes hung on pivots at the centre, and all moveable, so as to give abundance of air. The outside border was previously described. Air is also given at the ridge by ventilators 5 feet long and 1 foot deep, hinged to the ridge-board, and opened and shut with line and pulley. The sides and roofs of both houses are divided into bays by studs and rafters of wood 6 feet apart; and between these, iron sash-bars are placed, and Mr. O'Brien for such structures prefers this combination to either material alone. The space inside is divided by four pathways 3 feet wide into five unequal beds; one close to each side, 4 feet wide, 2 feet above the pathway, and therefore of the same height as the ground level outside, down to which the glass comes. The beds under the two side spans are 11 feet wide, and the central bed is 18 feet wide. Those three beds are scarcely a foot above the pathways. They were chiefly supplied in September with Peaches and Nectarines in the open bush style, standing some 12 feet apart, and ranging from a little less to a little more than 10 feet in diameter of head, and 10 feet in height. These were planted out in what might be termed strong battened baskets, with stout slabs at the bottom to prevent the roots getting down; and every year, or every other year, the roots could be pruned outside the battens when the growth became too vigorous. The trees seemed to be vigorous enough, and well stored with wood nearly ripe, and the buds strong and prominent. A great number of fruit trees could be accommodated besides these Peach trees in this house, which we presume were then out of doors; but the house was rendered gay with orange trees, large Scarlet Geraniums in pots, and a number of the finer and more tender Conifers. Vines were also planted alongside the borders at the ends, to be grown a good deal in the vineyard or Raspberry style. We forget now if planted in the centre of the house, but we thought a few connected arches, either transversely or longitudinally, or both, with Grapes hanging from them, would be a good feature, and if done only thinly would not interfere much with the light necessary for the mass of plants in the beds. Perhaps such an arrangement, however, might lessen the surprise which every visitor must feel on entering the Fern-house. The quantity of Strawberries obtained from such a house must be something wonderful. A little below each furrow-plate are two shelves—one on each side, another at each side in front, and, we think, one above the path at raised border at the sides, and then one at each end, making, we presume, ten across the house besides the ends, and thus furnishing from nine hundred to a thousand feet of shelves for Strawberries. The shelves seemed to form part of the building, were about 7 inches wide and 1 inch deep, or a little more; and whilst the outside was nicely painted, the inside was well pitched so as to retain water. With so much light and air, and not far from the glass withal, and also, we presume, not being forced very early, we can well suppose that the clusters that hang from the shelves will be magnificent.

FERNERY.

The only outside distinctions between the orchard-house and fernery (the roof being spanned and finished the same way), are that the fernery, though the same width, is shorter by 25 feet or so; the roof is higher by 2 feet; and the floor being 18 inches lower, the height from the floor is 3½ feet more than the orchard-house. This makes the height to the ridge of the centre span 20 feet, side spans 18 feet 6 inches, furrow-plates 13½ feet, and side-wall plates from the longer slopes 12½ feet. Again, this 12½ feet has fully 6 feet of brick-wall, and in this sliding ventilators are placed, the ground being naturally lower here than at the orchard-house. The glass above the brick and all the roof except the ventilators at the ridge are fixed. There is, besides these great essential differences, a *double* glass roof; the outer one for each slope of the span being divided into two lights, fastened to the rafters, &c., by thumb-screws about 4½ inches above the lower fixed roof, so that one or all the lights may be moved at any time. On the upper half or light a piece of hoop iron is screwed, beneath which the lower light slips, so to prevent any wet getting between the roofs. The enclosed body of air will so far act as a nonconductor, and thus secure an equable, temperate, enjoyable atmosphere inside the house. We have frequently recommended such roofs, though our own experience has been rather limited, but that sufficiently told in their favour. Where high temperatures are wanted in spring and winter, the expense of the extra glass would soon be saved in coals, and besides, even in low pits and frames, there would be no necessity of covering and risking glass-breaking; we were, therefore, delighted to find Mr. O'Brien recommending them so highly. No doubt they will become much more general, and most likely old Ireland, now so thoroughly resolved to go ahead, will take the lead in the race. Mr. O'Brien is confident that his double roof in general makes a difference of temperature of from 12° to 15°—a mighty difference for an enjoyable house under a keen frost at Christmas and a broiling sun at midsummer. And once more as respects the roof. At our visit the sides and roof were muffed, and various tints seemed to be on trial. Now, all the inside glass of the roof is muffed of a wine-red colour, and the warm and cheerful look it gives inside, and the tinge the plants receive renders it surprisingly effective. We are yet in our pupilage as to the influence of tinted glass; but we can well believe the striking effects thus produced. We were privileged twice to see a great lady's boudoir. The walls were covered with white-flowered satin, and rich ornaments in addition. On a summer day it looked so chaste and cool! On another summer day with a bright sun the windows were shaded with bright pink muslin curtains. The effect was magical, almost overpowering; the flowers of the satin seemed to stand out in bold relief, and one felt as if he were moving in an atmosphere of crimson and gold!

Having thus glanced at the peculiarities of the outside of the house, we pass the door in the glass partition that separates it from the fruit-house, and step down on its floor of clean shingle. And what a surprise! The idea is at once impressed that you have suddenly come on the ruins of a once sacred fane, over which, now deserted alike by priest and devotee, vegetation is gradually but surely exercising unbroken dominion. Massive buttresses from which spring pointed Gothic arches, 12 feet from centre to centre, and 12 feet from floor to point of arch, throw the main part of the house into a central and two side aisles. These buttresses and arches are built of thick greyish-brown slate stone brought from the lead mines. We presume they are cemented near the centre, as the joints outside are mostly open, not only thus keeping up the idea of hoary age, and the wasting effects of time, in a structure but of yesterday, as it were, but furnishing no end of places where Mosses and Ferns may find a comfortable home. From the springing of the arch to the coping, many large places and openings are left in which depending Ferns and Mosses will grow freely and strongly. Many Begonias with fine foliage had been planted in such buttresses, flourishing all the better from their fleshy rhizomes being somewhat squeezed by the stones or slates. The colour of the leaves was also more vivid than usual, and the double muffed roof prevented any such a thing as a spot or a scorch to mar the effect. Many of the Adiantums, including the native capillus-Veneris, &c., along with drooping Ferns from the arches, and Chinese and other Bamboos at the base of the buttresses, along with Mosses, &c., were giving the buttresses and arches such a finished appearance, as to show that ere long great taste will be required, not so much in giving a vegetable covering of the most beautiful in form and character, but in so regulating it as to allow the stonework to be seen. Though the house is intended to be kept merely temperate, and, therefore, thoroughly enjoyable, not only will the smaller and more tender of British, Irish, and North American Ferns have a chance of flourishing thoroughly, but all except the very tenderest of tropical kinds will manage to live and thrive, as it is well known that many that are usually kept in a stove will stand a good amount of cold uninjured.

Whilst the buttresses are thus decorated, the open spaces of the aisles are now chiefly occupied by large plants with fine foliage, mostly planted, or seeming to be so, in little mounds of rockwork. The following are some of the most striking that thus placed singly cannot fail to command attention:—A noble plant of Latania borbonica, with its beautifully plaited fan-like leaves; a noble plant of Dicksonia antarctica, 10½ feet in height to top of fronds, fine, dark, clear stem 3 feet in circumference, and the fronds forming a circle 12 feet in diameter; Dicksonia squarrosa, true, 11½ feet in height, with noble fronds, and feathered with offsets all up the stem; Alsophila australis, [illegible] feet in height, with an elegant crown of healthy fronds; Alsophila excelsa, 11 feet in height, with noble foliage. Then there were fine large plants of Cyathea dealbata, Cyathea medullaris, Alsophila Macarthiæ, Rhopala De Jonghi, and the beautiful Aralia leptophylla and papyrifera; also good plants of the angular leaved Dammaras from New Caledonia; Dracæna [illegible] metophyll[illegible] nictum, 12 [illegible] circumference; Chinese Coltsfoot, Farfugium grande, 20 feet in circumference; and a noble specimen of the India-rubber plant, which with its thick, leathery leaves contrasted strongly with the feathery foliage by which it was surrounded.

If criticism here would dare intrude, it would be to the effect, that the shingle on the floor was rather bright, and the fine plants in the aisles just regular enough to be in general keeping with the leading idea—a fault, if fault it be, which will soon be removed as the principal plants grow, and Ferns and Mosses break in upon and take away everything like symmetry of outline in the pathways.

Two four-inch hot-water pipes go right round by the sides of the house, so that, for such a large place, will show it is not intended to use much heat, and yet we are convinced that not only Australian tree Ferns, but Palms will flourish in it. There were platforms at the sides on our visit, but Mr. O'Brien kindly told us how he intended having an irregular rockwork there as well as at the entrance end, and since then the design has been carried out. Between the wall a small opening is left to allow air to rise from the ventilators in the wall already referred to, and the rockwork itself being constructed over a series of rough arches and caverns, &c., over the heating pipes, the air is not only kept gently in motion, but in cold weather it is heated before passing into the house. From the double roof, however, and the great size of the house, no great rushes of air at any time are necessary, and all changes of temperature are effected very slowly and gradually.

One feature more, which has been before our eyes all this time, though unfortunately the pen can only dot down one set of ideas at the same time. The north end of the house is a solid wall, and in front of it is a fine, massive, irregular specimen of rockwork, formed of different materials, but each by itself, and thus on a limited scale furnishing materials for geological study. These, so far as we recollect, were Ballycorus clay slate, red granite, grey granite, quartz, red sandstone, conglomerate, tufa, petrified moss, &c. The lower part of the pile is not only irregular, but formed into arched vaults, caves, recesses, nooks, and crannies, to suit some sweet little things that modestly like retiredness from the glare of bright sunlight, as the varieties of Killarney Fern, and some other of the Trichomanes, and such Hymenophyllums as Tunbridgense and Wilsoni, and other small Ferns and Lycopods. Then on the face of the rock were fine specimens of Platyceriums, good foliage of Begonias; and among other Ferns and Mosses, we have a vivid recollection of a Platyloma throwing its elegant fronds over red granite. Steps, rude as they ought to be, take you from either side over the top of this rockwork, revealing some rarity and beauty at your feet at every step until, reaching the top and surveying the whole—the wreathed buttresses, the draped arches, and the expanse of the fine foliage of tree Ferns, &c., beneath your eye, you might easily imagine you were standing amid the ruins of the buildings of a forgotten race, such as are to be found in central America, where vegetation in wild melancholy grandeur is revelling amid, and obliterating the evidences of a previous power, genius, and civilisation.

Outside once more on the lawn, the least we can do is to express our obligation to Mr. O'Brien for his kind courtesy; our best thanks to Mrs. Bewley for sending through him a view of the fernery, which will give a certain but very imperfect idea of its romantic interest; and our more than thanks to Mr. Bewley, not only for what he has accomplished, but for the great liberality with which he permits these doings to be seen by all the lovers of the rare and the beautiful. We need scarcely express the hope, because certain it is already realised, that his own happiness will be increased in knowing that he is adding to the happiness, the knowledge, and improvement of visitors. These visitors will be numerous, no doubt, if it be true what was written the other day by a friend in Ireland—"If, as you said, that fernery was worth going a hundred miles to see in the middle of September, it is well worth going a thousand miles to see now."

P.S.—After folding-up the above we received a note from Mr. O'Brien in answer to a request that he would mention a [illegible] the rarest plants, and new ones received since our visit; [illegible] following, not mentioning those already referred to, are what he notices, the list of which may be interesting to many readers.

Fine-foliaged Plants.—Pteridophyllum ceylonicum, with fine leaves resembling Pteris umbrosa; Cyperus alternifolius variegatus, very ornamental plant.

[illegible] already referred

to, Cibotium princeps, Alsophila Cooperi, Rhipidopteris peltata, Schizæa elegans, Platycerium Wallichii, Trichomanes exsictum, T. trichoideum, &c., Gymnogramma Witenhalliana, G. Lanceana.

Amongst *New Plants*—Oncidium sarcodes, fine; Dendrobium Lowii; D. Devonianum grandiflorum, a fine variety; Cypripedium Schlinerii, very rare. He also mentions Phalænopsis Schilleriana, is as sweet-scented as Vanda suavis, which has not been previously or sufficiently noticed. Also that they have got a distinct and superior variety of Alocasia metallica, the leaves being more cordate and much darker, worthy of the affix "superba;" and in fine that the Eucharis amazonica should not be confined to a small pot. We have them with a dozen of spikes and above forty flowers open at a time on a single plant, and it is scarcely ever out of bloom.

The fresh importations have been—20 Oncidium Lanceanum, a fine variety, which throws flower-stems from almost every leaf; 300 Epidendrum bicornutum major, which will thrive only on a block; 200 Zygopetalon rostratum, beautiful and rare; and 500 Ionopsis paniculata, beautiful and rare, and in bloom all the year round.

We believe the little Fern-houses are on the north instead of the south of the Orchid-house. In the course of four months we get confused as to positions.

In the plan at page 499, for "kitchen garden," read "reserve garden;" and at page 501, second col., twenty-first line from bottom, for "Lycopodiums," read "Lygodiums." R. Fish.

USE OF FLAX REFUSE.

I should have supposed that scutch or skimp as it is called in some places—*i. e.*, the refuse in dressing flax, would have been quite as useful as refuse cocoa-nut fibre, and yet experienced farmers here make no use of it. Pray ventilate the question.—Another Clergyman below Bristol.

[We are not sufficiently acquainted with the scutch or refuse obtained by retting flax to be able to give an opinion upon the question, whether it is likely to answer the same as cocoa-nut fibre refuse as a soil for Ferns, &c. Our correspondent writes as if he thought the refuse of the cocoa-nut fibre *is* a "fibre;" but it is not so, but a brown powder more like brown rappee snuff than anything we can compare it to, unless it be mahogany sawdust. The farmers of the Vale of Taunton do not use the flax refuse as a manure, probably because from the slowness with which it decays its benefit is not promptly visible. "Flax and hemp refuse," says M. Sprengel, "possesses as much and even more carbon than pea and bean straw; still it yields a much worse manure, which is to be attributed to a want of nitrogen. It yields humic acid very slowly, and the decomposition is very difficult on account of its being composed chiefly of woody fibre." The slowness with which it decomposes renders it a durable manure, and its fertilising power would be discernible, probably, more on the second and third crops than on the first after its application.

Besides the carbon that the flax refuse contains, it has among its constituents five per cent. of the following mineral substances, all contained also by our cultivated crops:—potash, soda, lime, magnesia, alumina, oxide of iron, phosphoric acid, sulphuric acid, chlorine, and silica.

It deserves special notice that when the flax is steeped in water, as usual in preparing it for the flax-mill, much of the saline matter is extracted from the flax by the water. Sir Robert Kane found that besides much decomposing matter, that the water had extracted chloride of potassium, sulphate of potash, carbonate of potash, carbonate of soda, phosphate of iron and alumina, phosphate of lime, carbonate of lime, carbonate of magnesia and silica. This steep-water is really a liquid manure, and we find the following testimony published by Mr. J. Dixon of the British flax-mills.

"I used the water in which I had flax steeped as a manure for flowers. I followed up the experiment; and although I was from home for five weeks, during which time none of the plants had been watered with the flax-steep, still I am able to say that those Dahlias to which I used the water early continued to keep ahead of those not so treated. The latter grew from 2½ feet to 3 feet high, while those to which steep-water was applied grew from 7 feet to 8 feet high, when three of them broke down, the sticks being too weak to support them against the wind; but their beauty, from the abundance of bloom, surpassed anything that I have seen. I did not manure my garden for four years, being determined to keep it poor, in order to try what effect flax-water would have in producing good full-grown flowers in cold worn-out soil. I am now able to assert that none of my neghbours had such a blow of Roses or Dahlias as I have had; and to them I can refer, as they were witnesses of the fact. I had, by the use of flax-water, Dahlias from 10 feet to 12 feet high, loaded with the most perfect flowers. This rich liquid manure (for it deserves the name) will be found invaluable to market gardeners and growers of flowers. I find it to annihilate the green fly."]

SUCCESSFUL EXPERIMENTS WITH COCOA-NUT FIBRE REFUSE.

Cocoa-nut fibre refuse is a first-rate material for growing Ferns, Orange trees, Gloxinias, Camellias, Azaleas, and Begonias. I was induced to give it a trial about this time last year through what was said in The Journal of Horticulture in its favour.

Now, not having a very good opinion of applying vegetable refuse, particularly woody fibre, to the soil, owing to experience telling me that woody fibre in the soil frequently is a step in the path towards making a healthy tree become diseased at the root (it causes that injury by engendering various fungi that frequently harbour on old wood, and accompany or hasten vegetable decomposition). For that reason I thought I would be cautious and try that wonderful stuff on a small scale.

Well, a cartload was procured of the renovating refuse, and twelve plants of an equal size were chosen for the Fern experiment. Six were potted in the usual Fern compost—viz., one-half turfy peat, one-quarter loam, and one-quarter silver sand. The other six were potted in the refuse. For Gymnogrammas the refuse that passed through a half-inch riddle was used for potting, and the same for Nothochlænas; but for Aspleniums the refuse was used in its rough state. The following table will show at a glance the results:—

Name of Fern.	Size of plants at potting.			Size of pot for refuse.		Size of pot for Fern compost.		Size of plants after six months' growth in refuse.			Size of plant after six months' growth in Fern compost.		
	In height.	In diameter.	Number of fronds.	Before potting or growing in.	Put into.	Before potting or growing in.	Put into.	In height.	In diameter.	Number of fronds.	In height.	In diameter.	Number of fronds.
	ft. in.	ft. in.		diameter. ft. in.	diameter. ft. in.	diameter. ft. in.	diameter. ft. in.	ft. in.	ft. in.		ft. in.	ft. in.	
Asplenium diversifolium	0 10	1 1	4	0 6	1 1	0 7	0 10	2 3	2 9	9	1 6	1 10	7
Asplenium Belangeri	0 8	1 0	12	0 6	1 0	0 6	0 9	1 2	2 6	38	0 10	1 8	27
Gymnogramma chrysophylla	0 9	0 10	7	0 5	0 11	0 5	0 8	1 8	2 3	23	1 2	1 11	24
Gymnogramma ochracea	1 3	0 11	8	0 4	1 1	0 6	0 9	2 1	3 1	36	1 10	2 3	28
Gymnogramma pulchella	1 2	0 10	6	0 4	1 1	0 5	0 10	2 8	2 6	19	2 1	1 11	17
Nothochlæna nivea	0 6	0 8	5	0 3	0 9	0 3	0 6	0 9	1 3	24	0 8	0 10	18

They were grown in a small house (20 feet by 16 feet), and all had the same treatment; but those in the refuse required treble the quantity of water those in the Fern compost needed. The temperature ranged from 50° to 80°, and a hygrometer indicated from 85° to 91° of atmospheric moisture or humidity.

Unfortunately the bursting of a flue which heated the house brought trouble. Gymnogrammas (chrysophylla was killed outright), and Nothochlænas in the Fern compost were sent to the rubbish-heap; but those in the refuse showing signs of life were preserved and are doing well. Aspleniums were not injured by the smoke and gases to a serious extent.

Why should those in the refuse stand smoke better than those in peat, &c.? That puzzles and makes me feel anxious to know the reason.

Moreover, the refuse was tried in another way. Half loam and half refuse, with a little sand but no peat, which raised Pteris argyræa 2 feet high and as much through within eight months, into a plant 5 feet 6 inches high, and 5 feet in diameter. Also, a Drynaria morbillosa, 4 feet across, with six fronds, was potted with the refuse compost, and the same plant is now 12 feet in diameter. Again, a plant of Davallia polyantha, with twelve fronds, and the plant 2 feet in diameter, was treated to a pot full of refuse, the pot 1 foot 6 inches in diameter. Well, it is at present 5 feet in diameter and very strong.

Then, again, an Orange tree last March had thought proper to become deciduous, evidently a hopeless case for the physician. Bad treatment had, no doubt, been the cause of its cutting such a miserable figure; but, never mind, cocoa-nut refuse is just the thing to help a poor fellow with a lame leg over a six-barred gate. It makes 'em go whether they will or no.

Now, that Orange tree was potted in a compost of half refuse and turfy loam. It was put in a twelve-inch pot, and about May-day it began to shoot, and made during the summer ample growth, so as to be nicely green all over, and it has kept its leaves this winter, though treated precisely as it had been previously. Upon that very tree are two hundred blossom-buds ready to unfold, and more swelling. What a contrast between last year and this! Last year no leaves, no bloom ready to expand, everything looked gloomy; but where there is life there is hope, and they that have an old Orange tree with but a faint spark of vitality about it, have nothing to do but give it some cocoa-nut fibre refuse and it will recover.

The Orange tree in question is a dwarf variety, name not known, about 3 feet in height, and as much through, branches close to the pot, even hanging over, altogether forming a compact bush. It blooms freely about the beginning of April in a greenhouse; the flowers are whitish, inclined to rosy. The blooms set freely, and two years ago it had thirty fruits upon it, but although highly perfumed the fruit is watery and neither sweet nor acid. It evidently is either a seedling or a cutting, but I think the former, as it is spiny on the branches, and the root not like that of a cutting. It has a tap root like a seedling. I understand it came originally from the Horticultural Society some twelve years ago.

I have read that Orange trees raised from seed never bloom until they cease to have spines on the wood, but depend upon it it is all fudge. Moreover, it is a general notion that Orange trees never produce fruit in this country worth eating. However, those having a vinery with a pit inside may grow that fruit to perfection. I speak from experience. I know two trees on four-feet stems, with heads 8 feet in diameter, that annually produce from fifty to sixty-five fruits each, varying in weight from 8 ozs. up to 12 ozs. They are the Tangerine variety. Also, Lemons were grown on the back, 6 ozs. to 13 ozs. in weight, and a Shaddock with larger fruit still.

But about refuse. It restores the impaired constitutions of sickly Camellias, entirely removes the variegation on their leaves, and promotes healthy root-action. Begonias like it, Azaleas thrive well in it, and Gloxinias become half shrubby.

Lastly. This cocoa-nut fibre refuse is just the thing for us small boys—Ah! or you big guns either, to keep [illegible] plant in good health, or to restore one having a worn-o[illegible] nearly exhausted constitution.—George [illegible]

Hall R[illegible]

[illegible] the following [illegible] from a [illegible] amateur living at Alexandria dated [illegible] 1862 [illegible] probably interest some of your readers. [illegible] which [illegible] introduced [illegible]

generally as Souvenir de la Malmaison. One of the Tea Rose trees I received from you, has this winter produced the best blooms of Saffrano I ever saw. Homer is also a perfect show in the garden of a friend to whom I presented it."

CONVERTING A VINERY INTO A STOVE.

A VINERY is well adapted for a stove or hothouse, but, unfortunately, only the upper part of the lights are made to open, the lower ones are fixtures: therefore the Vines cannot be turned out during the winter. It would be a great matter to be enabled to use this house as a stove or forcing-house. As there is a greenhouse it is almost useless except for Vines. What would you advise? What is the highest temperature Vines will bear during the autumn and winter?—A YOUNG GARDENER.

[If you had given us a cross section of your house we should have been able to advise you better. The temperature of Vines at rest in autumn and winter should not be above from 40° to 45°. Your best plan would be to have a glass or boarded partition in front, in which to place your Vines in winter, with a few ventilators to the external air to keep the Vines as cool as you like; and ventilators also in the partition to let air into the house when desirable, and also heat from the house to the Vines to break them gradually. If the Vines are at all young, and planted at the front, a couple of feet or so would hold them in the winter. A glass partition would be best; and, if at all wide, could be made moveable, and serve other purposes in summer. The particular mode depends on the construction of the house, but there need be no difficulty.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

Now that the weather is favourable for the purpose, clean and stir the ground between the rows of Lettuce, young Cabbages, autumn-sown Onions, Garlic, Shallots, and other such crops. Clear the ground of all litter. Turn and roll the walks, if necessary, for the destruction of weeds, or where they have been loosened-up by the winter. *Beans, Broad*, make another sowing. The Longpod is a prolific sort, but the Green Windsor has the best appearance when sent to table. Earth-up the early crops. *Capsicums*, pot-off the young plants as soon as fit and place them in a hotbed-frame; they are very liable to the attack of green fly, which should be avoided as soon as possible. *Carrots*, get in the main crop if not already done. The old Early Horn is an excellent sort both for early and late use, as it keeps equally well with the long sorts, and is much better suited for some soils than the others. *Cauliflowers*, the plants raised in heat to be pricked out on a light hotbed; the gentle bottom heat will greatly assist in pushing them along without being drawn, as it is termed, which is the case when they are grown under glass. *Celery*, prick out the early-sown into boxes, or on a slight hotbed. When it has taken root give it air at every favourable opportunity. *Jerusalem Artichokes*, if not yet planted no time should be lost in getting them in. *Kidney Beans*, put in a small breadth of some early sort on a warm, dry, sheltered border, and plant a quantity in small pots to be raised in a cold frame, and planted out as soon as all danger of frosts is over. *Lettuce*, some of the best plants that have been wintered in frames may now be put out—some under a south wall, and others in a more open situation. *Mushrooms*, when they are grown by fire heat a constant moist atmosphere should be kept up by pouring water on the path, or placing pans of water on the flues. Heat of the house when bearing to be about 60°. *Onions*, sow the main crops; if large ones are required plant the very small bulbs of last year, or the autumn-sown plants in very rich ground; and still larger may be got by well treading the ground, and laying about 3 inches of very rotten dung upon it, sowing the seed on the dung and covering it with a little fine earth. *Peas*, stick the early crops as soon as they are earthed-up. A few small beech boughs with the leaves on to be stuck on each side of the row to protect them from frost and cold winds. *Purslane*, make a sowing on a warm border. *Radishes*, sow for successional crops. The Turnip-rooted may now be sown. *Rhubarb*, it may now be forwarded by placing a hand-glass over the roots; a little litter to be placed around the bottom [illegible] glass to prevent the ingress of cold. *Savoy*, make a good sowing of the Dwarf Green, which [illegible] good old sort for purposes. *Salsafy* and *Scorzonera*, sow in drills from s to 1 foot apart.

FLOWER GARDEN.

is a good time to sow a good collection of hardy annuals. ture of some of the hardier sorts, such as Collinsias, s, Eschscholtzias, Candytufts, Nemophila, Mignonette, Peas, Corn-plant, &c., strewed over the open parts of the ery-borders would give them a gay appearance. Take age when the ground is dry to stir the surface of the ery-borders before sowing the annuals, or to give the fresh and clean appearance. Walks out of order to be and, if necessary, fresh-surfaced with gravel. The plant- herbaceous plants should now be completed without nd the beds or borders they occupy dressed with fresh China, Tea, and Bourbon Roses, if not already pruned, o longer to be left without that essential attention.

FRUIT GARDEN.

that recently-transplanted trees are not suffering from water. This, however, will hardly be necessary if the vy rains we have had in the neighbourhood of London en general; but on dry porous soils their roots should be d with decayed leaves to preserve them in a uniformly tate. Attend carefully to the protection of the blossoms ruit trees; spruce branches, when nothing better can be d, will be of service, taking care that they are so fixed as e liable to blow against the blossoms.

STOVE.

ed with the repotting of such plants as require it. ndas, Clerodendrons, Ixoras, and other such plants that rooted and established in their pots, to be supplied occa- with some clear but not over-strong liquid manure pid state, to obtain strong short-jointed wood. It is y to keep up a vigorous root-action and give a place as the glass as possible.

GREENHOUSE AND CONSERVATORY.

ed as diligently as possible with the potting of such of l-wooded plants as require it, to afford them the advan- the spring season for making a vigorous growth. Be before potting to have the ball in a moist state, and iving large shifts to weak growers. If the Camellias looming are now started into growth the wood will be early, and by such treatment with the ordinary attention ld be bloomed in November, when their flowers retain auty much longer than in the spring. When Fuchsias nded for large specimens they will require a liberal shift, smaller specimens established in their pots would be d by an application occasionally of clear liquid manure. erarias for late blooming to be shifted. Continue as the go out of bloom to prune them back, and when they rted into fresh growth give them a liberal shift, using rfy peat for the purpose. Pick off all decaying flowers ves, and endeavour to keep the conservatory gay with n bloom, placing them in the best positions for a pleasing arranging and displaying the colours to the best ad- Look for insects, and destroy them as soon as possible. the plants in the borders of the conservatory, now that getting into active growth, are not suffering for want of their roots.

PITS AND FRAMES.

tender annuals and a few German Asters on a slight erman and Ten-week Stocks to be sown in fresh soil in frame or one that will soon cool down. Give bulbs f air, and also all half-hardy plants. Pot the suckers of rent sorts of Lobelias. Follow up the matter of propa- nd see that cuttings of young stock are carefully shaded ecessary. The Œnothera missouriensis is a good mass Two or three strong old plants taken up now and ed to bottom heat will produce plants enough for a ss at bedding-out-time, to be struck like Dahlias. One ll yield thirty or forty cuttings, which will strike in a t or three weeks.

W. KEANE.

DOINGS OF THE LAST WEEK.

SEASONABLE WORK.

reather has been too wet and drizzly to do much on the und. In light soils it does not so much signify, but if soils are at all stiff, approaching them when wet, by digging, trenching, or turning, is worse than labour thrown away, as ground moved in that state hardly ever gets kindly all the season afterwards. Just so as respects sowing: the seed to a great extent is lost, the soil clings round it, sealing it up hermetically from air and its oxygen, and even the fertilising rains do not pass freely. If soil is worked when dry, and seeds are sown then, no common amount of rain will ever consolidate the soil afterwards, so as to keep air from the seeds. If seeds must be sown on the ground when wet, in a garden, a dry covering should be given. It is best, however, to defer until a dry day gives a hazelly soil.

Used the drizzly days for patching and mending old sashes that are useful in laying over turf pits at this season for bedding plants, a small rail being laid down back and front just to keep the ends of the sashes off the ground; washing thoroughly every spare pot, turning Geraniums into turf pits to get at the pots, and washing them, as every pot almost of moderate size is washed half a dozen times from February to June, after which stacks of them are kept for a wet day. To show nothing need be lost, a man to-day has been making propagating-boxes out of old zinc troughing that was worn out, unfit for conveying water. It is mostly about 4 inches or 5 inches wide U-shaped, and being broken through with a blunt chisel into lengths of about 3 feet, a piece of wood is fixed into each end by a tack, and they are then first-rate propagating-pans to set in a hotbed. I was also much pleased with the man that first turned this useless stuff to account, in the way he got ends to slip in. He pitched upon a Larch tree or pole of the requisite diameter, sawed off pieces about 1 inch wide, chopped the piece in two, and one cut thus closed up both ends. The ends not being very tight, and the holes in the zinc that rendered them useless for spouting, made them just the thing for propagating-pans. When I have evaporating-pans made of zinc to place over hot-water pipes, they, too, when worn out make excellent pans for Lobelias, Verbenas, &c., for several seasons. I know of no plant that would not prefer zinc to crockery-ware; but I do not think that zinc would last long for such a purpose, the plants feed on it so much.

FLOWERING PLANTS.

Sowed a good many flower seeds, as Lobelias, Petunias, the new kinds of Indian Pinks, as Heddewigii, laciniatus, and also, Capsicums, Chilies, &c., placing all these in heat; also, Pansies, Auriculas, &c., along with Love-lies-bleeding, and Prince's Feather, to be early, and placed them in a very mild heat under glass. We will defer Stocks, Asters, Zinnias, &c., to the end of the month, but those who can manage to give them room may sow now. There are many of these things that do better if they never receive much check. Most likely we shall sow in a slight hotbed, and prick off and protect with calico. Were we sowing in the beginning of March, the plants might be injured, because we could not afford to keep them under glass. Most of them, especially Zinnias, these grand-coloured old things hardly ever forgive rough treatment, or being knocked about before they are finally transplanted, and this can rarely be done before the end of May.

There is much depends on sowing. We generally fill the pot half full with drainage, then half with rough compost, then finer, and then a layer finer still. This is gently pressed with a round board and a nail in it. The seeds are then sown, and the small dust-like ones as Lobelia, Calceolaria, Clintonia, Tobacco, &c., have just the slightest dust of soil fine-sifted, and white sand thrown over them, and pressed again. All these small things we honour with a square of glass being placed across the pot, and when extra care is required place a piece of paper over the glass. If the soil is rather moist it will seldom be necessary to water before the seeds are up, and in watering such little things no rose should be used, but the water should be gently poured on a crock or oystershell held in the hand at the sides, so as to flood the surface of the pot without any dashing from a rose.

SOWING ANNUALS.

We have had several inquiries about sowing flower-seeds in borders and flower-beds. All the North American annuals, and all hardy annuals, may thus be sown; but if not sown in autumn little will be gained in sowing before the end of the month, unless in warm and dry localities. To make the most of annuals in grouped flower-beds, we decidedly would always transplant rather than sow, so as to have full, regular, well-formed groups. Suppose you could cover a piece of a border now with old sashes, mats, or calico, and the border was in fine order, drills might be drawn 5 inches apart, a little rough-riddled leaf mould thrown in, soil placed on that, the annuals sown thickly, and then covered properly; by the end of April you could lift these and plant them in little patches with scarcely ever feeling the moving, and then you might make sure of having regular beds.

Several inquiries have been made as to Cerastium tomentosum forming a good edging by planting rootless slips now 6 inches apart. We did so four years ago, and never had a better edging. Besides, the keenest amateur may depend on what Mr. Thomson said in a late Number, as he is not the man to conceal any secret in the matter. A lad planted some tit-bits about 1½ inch long in a border before Christmas, and I find there is scarcely one that is not rooted. Complaints have also been made of the variegated Arabis being difficult to strike, but in autumn and spring it strikes freely under a hand-light, and I find that some hundreds of cuttings put in the open border at the same time as the Cerastium, are now rooting nicely. These cuttings had no protection but a few spruce boughs laid over them in severe frost.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, *Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

VERBENA PURPLE KING (*An Amateur Gardener*).—Although this Verbena was said, recently, to be the best of the colour in answer to a correspondent, it will not make a bed *by itself* worth looking at. It must have a white or scarlet along with it to bring it out.

EUGENIA UGNI (*Old Deen*).—In your northern position we would keep Eugenia Ugni in the greenhouse in winter, and in the orchard-house in summer. Grow in heath soil, loam, and a little leaf mould.

OLD ESPALIER APPLE AND PEAR TREES (*Rev. E. C.*).—Those bearing only at the ends of the branches. If the trees are strong raise and replant, or root-prune them. If this would be too much, and there is no lack of vigour, thin out the spurs and train-in young wood either backwards or downwards. If there is a sign of weakness thin the spurs, and manure, especially at the surface.

FUCHSIAS AND VINES UNHEALTHY (*A Constant Reader*).—We found no insects, but traces of where thrips had been, and we think some eggs of a beetle. The black appearance we attribute to too much moisture at the roots, and not enough of air in this dull weather. We would smoke with tobacco to make sure. Place sulphur on the coolest part of the pipes, and give more air.

SOWING ASTERS AND PETUNIAS (*Kate, of Ashford*).—The best time to sow the Asters for the first bloom is about the middle of April, but they will not bloom quite so soon as you wish—viz., July. The best time to sow Petunia seed, which must be done in a mild heat, is any day from the 1st of February to the 1st of May, when one can spare the room for the seed-pots, and for the pots of seedlings as soon as they are fit to be potted-off. But say the first week in April for moderate means.

NECTARINES NOT RIPENING (*H. M., Willingdon*).—There seems to be a want of reciprocal root-action. Before the fruit approaches the fruiting state, give the trees a good mulching with rotten manure, and water pretty freely, but not all at once, with water at from 60° to 70°. You do not say what the Nectarine is. Some kinds require glass to keep the skin from cracking, as in such tender kinds the supply of sap is too great for the fruit. Such is often the case with the Stanwick Nectarine. You may plant double Gorse now.

BUTTERCUPS IN A PASTURE (*A Subscriber*).—There are many species of the genus Ranunculus confounded commonly under the general name of "Buttercups." Your pasture being dry, and if the plant emits runners, it is, probably, Ranunculus repens, or Creeping Crowfoot. There is no mode [illegible] destroying it that we know of but paring off the so[illegible] it grow[illegible] inches deep, a[illegible] [illegible] grass seeds.

CINERARIA [illegible] [illegible]als narrowly edged wit[illegible] are [illegible] [illegible] out the th[illegible] flower [illegible]

[illegible] case we should remove the [illegible] [illegible] guano thickly over the place where they were, or wat[illegible] ammoniacal liquor from [illegible]

BOOK (*G. Baker*).—The cost of "The Science and Practice of Gardening," free by post, is 3*s.* 4*d.* You can send either postage stamps, or a post-office order.

WORMS AND ANTS ON LAWN (*G. R.*).—The worms can be banished by occasional waterings with lime water; and the ants by sprinkling guano over their haunts.

CUCUMBER PLANTS DECAYING (*W. G. M.*).—The fungus you sent is the common Mushroom; it has nothing to do with the failure of your Cucumber plants; the stems of which are decayed, we think, by the excess of moisture in the air and soil of the frames, and want of ventilation.

WHITE MITE ON LETTUCE ROOTS (*A. B.*).—It is Acarus hortensis, the Garden Mite, and does no harm; it only feeds on decaying vegetable matters. The roots of your Lettuces had decayed from exposure to cold and wet, and then became the appropriate food of the Acarus.

EDGING FOR KITCHEN-GARDEN BEDS (*T. C.*).—Nothing will look neater (and certainly it is the "cheapest" edging) than white bricks laid with one of their angular edges as the summit of the edging. See our description and drawing of it as employed in Linton Park Gardens, No. 25, page 478.

BOOKS (*E. I. B.*).—The pamphlet you refer to, and which *affects* to form part of our series of "Manuals for the Many," is quite unconnected with our office.

VACANT PLOT (*An Old Subscriber*).—We would make a ridge-and-furrow ribbon of that open space, the ends of the lines facing the drawing-room windows, the other the greenhouse—that is, plant a row of the Salvia down the centre, and let the rows on each side of the centre be pairs of the same plants. The best way to put in these rows is the way you think best, because you cannot break the principle any way.

WALTONIAN CASE (*F. A. W.*).—No. 389 of THE COTTAGE GARDENER, which contains drawings and a description of this Case, is out of print; but we will have the article revised, and published in an early Number of our Journal.

HOT-AIR STOVE (*A Constant Subscriber*).—An answer is given to-day to an inquirer with a different signature.

FLOWER GARDEN (*Rector*).—The beds are all properly planted according to the design. We would not wish to change a single plant there.

CELINE FORESTIER ROSE (*Idem*).—A capital Rose to run over a good space of wall, and not be long about doing so. The Shanghai Rose from the Horticultural Society we have not yet seen, and know nothing of it. But if it was really very good we think it would not be under a bushel so long.

FLOWER GARDEN (*A Subscriber*).—In the first place never assume such a general name again. Every one who buys our Journal is a subscriber; and suppose ten such most absurd names came in the same week—why, we might put them in a hat, toss them for the answers, then your answer might be "Never saw such a muck of a thing," whereas your plan is the very art and secret of the very best style of planting for such a place—that is, it is the pure and simple promenade style, and you have done it better than it is done in any public place we know. But recollect about "a subscriber." Mr. Beaton answered your question long since about the way he intended to heat. He has not yet risked the expense. All right about your Vine.

PROPAGATING VARIEGATED ARABIS (*Calcaria*).—It does not come from seed; and, if it did, the seedlings would not, of course, be variegated but plain green; and plain people, without being green, ought to know and to remember that no kind or sort of variegated plant ever yet came true from seeds and probably never will. Another peculiarity of this most hardy and most beautiful edging, or rock, or vase plant, is this, that it is worthless that season if it is propagated in the spring. The way to do it is to divide the plants in October, to make cuttings of the best shoots then, and plant them out in the open ground with or without a hand-glass; and, if with a glass, to mind to see the cuttings have the same treatment as Cauliflower plants during the whole winter—that is, the glass to be tilted for giving air every fine day the whole time; and, if no glass is over them, to see the frost does not throw them out of the soil. We must repeat, Beware of spring propagation, as then the plants flower naturally; and, to make a cutting of any plant at that critical period, is not only an unnatural process, so to write, but a most unscientific process to the bargain.

DISA GRANDIFLORA (*J. T., Stockport*).—You must try again. You did not manage your plant at all right, or according to what has been given over and over again in these pages as the right way of treating it. It is an evergreen bog, or marsh plant, very nearly hardy. Tritonia aurea is just the same, with a similar habit of increasing itself; and Vallota purpurea is another plant, very near to them in its requirements, but will stand more hardship. There are ten thousand people in England who could not grow that Vallota; and there are seven gardeners out of every seven and twenty of them who cannot grow the Tritonia aurea without being covered by the reddest of the red spider, so you are not to blame at all for your Disa being a "dizzy" to you as yet. We had a long conversation at the show the other day with the gentleman who brought it to perfection, and he finds it now just as easy to do as a pot Crocus. He has it from seeds as freely as Calceolaria, and more easy to manage in the first stages. And to show the wandering habit of Disa, as soon as the seedlings make four leaves, they begin to make root-runners exactly like Tritonia aurea. As soon as he can lay hold of these seedlings he pricks out, just like Lobelia speciosa, and keeps them, of course, as damp at the roots as if they were in a bog up to the knees. Nine months since he put one of those seedlings into a little pot, and he put the pot in a bigger pot which had no hole in the bottom, and which had been kept full of water from that day to this. The plant was out of doors to October, and nothing ever looked better and more healthy out of water than that very plant. Next May he is going to make an island in a lake-like place for lots of his young Disas, as they do the Melon-beds on the lakes in Cashmere; and anybody could do the like with a couple of peat [illegible] a few skewers, and an old washing-tub, and let the island and the [illegible]oat about as the wind goes, with an umbrella-like covering over head of [illegible] new tiffany, as Disa does not like strong sun. Your plant is scorched, [illegible]thing else.

CALCEOLARIA CUTTINGS (*Ex Una Multa*).—The red dust on the lower [illegible] in your cold frame is a fungus, caused by too much damp. Dust the [illegible] sulphur, and ventilate more freely.

[illegible] OPENING (*J. E.*).—You do not tell us where the [illegible] are growing. We should think the failure [illegible]

HING-UP POTATOES (*An Amateur Gardener*).—We never earth-up a. Ours is a light soil; we plant in November 8 inches deep, and ily such varieties as ripen by the end of July. Earthing-up retards ning a fortnight. The earlier a Potato ripens the safer it is from rain. Let each gardener plant the same variety, and the same sized the same day, and cultivate his own way; at taking-up time weigh duce, and that will be the best test. You had better visit some tural machine makers, and select a garden engine for yourself. e all efficient, and the chief consideration is the price wished to be

PLANTS (*D. C.*).—The best plan would be to have small young f Tom Thumb Geranium put in the centre of the zinc pan about the of April, to keep it in a cold pit till planting-out time in May, and in week in April to plant round the Tom Thumbs such trailing hardy s would suit. We only know of two such that would meet this ar case—the Moneywort, and the small trailing yellow (Enothera a. Both these ought to be of freshly-divided old plants in little bits, be planted quite thickly close to the edge of the zinc pan. If that not meet your views, or the ideas of many others who may be look- for filling vases and rustic baskets this season, the next easiest get and to answer would be the lilac Ivy-leaved Geranium, or even ite one, for a dark bronze vase. In that case, the two Geraniums eed to be planted at the same time. It is an excellent plan to have s to put into vases, instead of filling the vases with the soil. The l over the Crystal Palace gardens have such pans.

-NUT REFUSE FIBRE (*H. H.*).—It is not the right refuse. No oma shoot came in your letter.

S OF PLANTS (*H. R. F.*).—It is very common; Orchis maculata, or Orchis. (*K. King*).—Some Labiate, probably a Mint, but we cannot ich a specimen, a mere scrap of drawn-up leaves, covered too, as it the cotton wool in which it was wrapped, the worst of all packing.).—You must really grow your Fern a little larger before we can ess its name with any confidence. It may be a very young Cysto- ut it may be almost anything else. If we were to guess at all, we ay a seedling Cystopteris.

TRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

th and 15th. TAUNTON AND SOMERSET. *Sec.*, Charles Ballance, Taunton.
h, 28th and 29th. BATH AND WEST OF ENGLAND (City of Wells). *rd*, S. Pitman, Esq., Manor House, Taunton. Entries close May 1.
h and 29th. HULL AND EAST RIDING OF YORKSHIRE. *Sec.*, Mr. J. n. Entries close May 14th.
h and 5th. BEVERLEY AND EAST RIDING. *Sec.*, Mr. Harry Adams.

EEPING USEFUL AND ORNAMENTAL BIRDS.

formation of societies in England and on the continent, for their object to encourage the breeds of useful and ntal birds, and to render us familiar with those brilliant that have heretofore only been seen by most people after re stuffed, proves the interest now taken in the different es of ornithology. There are such exaggerated notions t is necessary to enable the lover of these things to indulge by, that we think we shall be doing well if we endeavour e the pursuit easier.

his as in other things, it is well to begin with moderate and not only so, but it is well to fix a limit as the fair ary of ambition. Just as a man is not deterred from ; or renting a small place, because he will be in the neighbood of large domains: even so, he need not be dised, or prevented from entering on the pursuit of natural because it embraces so large a field. The owner of the place may improve or enlarge his property as prudence low or opportunity suggest, and in like manner the student teur may increase the number of his subjects as occasion ts.

ple who walk about London seeking amusement, and who the windows of the various shops, may have remarked nd laughed at afterwards, the trays in some of the city rs' shops. They contain numerous articles, and generally centre a bouquet of diamonds, or a startling hoop of ds and brilliants, and there lies close to them a ticket on is written, "Articles in this tray from 3*s.* 6*d.* upwards." looks at the cluster, the bouquet, or the hoop. They be the 3*s.* 6*d.*; then it sobers down, and wonders which

When the article is shown there is some wonder how be made for the money; then there is some doubt whether al; and then there is admiration. The fact that it is ours a charm that nothing belonging to another can possess. h of this applies to natural history. The great charm of birds or animals is to do so without interfering with abits: hence the desire to possess such as will breed. To ay be attributed the old, old, fancy for gold fishes in a They are uninteresting, and as a rule they know no one, not even the hand that feeds them. We view the aquarium as an animated book, and any appeal to the feelings, is rather to intellect than anything else.

These, however, can be indulged in, in any house and under any circumstances. Having to do with more active, or, at least, more interesting, and we think more beautiful specimens of animated nature; and having at this time an Australian Crow by our side, which is doing his best to make this paper too late, first by crowing, then barking, then miawing, and then whistling, "There is nae luck about the house;" while a Silver cock Pheasant drops his gills, raises his crest, stands on tiptoe, à la Tappertit, and beats his breast with his wings, à la Gorilla; and a whistle will bring twenty Ducks around us. We find so much pleasure in these things, and we are so convinced they are within reach of many who are not aware of it, that we are disposed to put on paper that which is our practical experience of it, showing how easy it is to make a beginning.

While we speak of these things, apparently to those only who live in the country, yet many London houses afford all that is necessary for keeping Pheasants and Wild Fowl. A small back yard will make a pheasantry. A cock and three hens may be kept well, and will lay and enjoy themselves in a place 9 feet square. A building like a sentry-box will give them all the shelter they require. It would have to be provided with perches, and there must be no flooring. The stones of the yard must be removed, and part of the space gravelled. A little lime and some dust must be put in, and it will be a great luxury if a small tree or shrub can be sunk in a large pot in the earth. The space that can be spared for these beautiful birds must be fenced with galvanised wire netting stretched on framework, and slight deal boarding should be put around to the height of 18 inches. It prevents the birds from being frightened, and takes from them the desire of trying to get out, whereby they often spoil plumage by pushing their necks through the meshes of the wire netting. They require only dry food, a little corn or bread. Their water should be kept in one of the fountains now so much used. Pheasants are especially London birds. They are handsome, bold, very hardy, do not suffer from confinement, make no noise, and emit no odour in the hottest weather. The Golden, Chinese, and Common are the best suited for a London atmosphere. The White, Silver, and Pied show the smoke. It adds much to the pleasing appearance if creeping plants are allowed to run over the netting in summer. But for instructions in gardening our readers must consult the horticultural part.

(*To be continued.*)

TAUNTON AND SOMERSET POULTRY ASSOCIATION.

WE have much pleasure in stating that this flourishing Society purposes holding its second annual Exhibition on May 14th and 15th, and we doubt not it will receive from exhibitors of poultry the confidence it deserves, by their making a large number of entries for the valuable prizes which will be offered. We have the prize list before us, amounting altogether to nearly £100 (Poultry and Pigeons). Besides the money prizes we notice that there are "fourteen pieces of plate," value £2 2*s.* each, and three silver medals to be awarded, and we understand these pieces of plate (which will be displayed at the time of the Show) are selected by the Directors, so as to combine the useful and ornamental. We have often heard the remark from successful exhibitors, that "they are tired of receiving silver cups," and to judge by the appearance of many sideboards we have seen, there is some ground for such a remark. The articles given by this Society last year comprised cake-baskets, handsome ruby and ground glass vases, salvers, tea and coffee pots, fish-slices, and forks in cases, spoons and forks of all sizes, inkstands, &c., and we are authorised to state that a similarly valuable assortment will be displayed on the occasion of the forthcoming Show. When we add that these prizes can be secured by the very moderate entry fee of 4*s.*, and that every prize is guaranteed to be paid (as was the case last year) the week after the Show, we feel certain the Directors will not have to complain of a want of entries for one of the best-conducted Shows in the kingdom. The classes are—Spanish, Dorking (two classes), Cochin-China (three classes), Malay, Game (three classes), Hamburgh (four classes), Poland (three classes). A class for Pea fowl, Pheasants and Gallinæ, and "any other variety," separate classes for each breed of chickens; Sweepstakes for single cocks of every breed, including a special sweepstakes class for one hundred Game cocks with a first prize of £20, six classes for Bantams, four for Ducks, and also for Turkeys and Geese. The Pigeon classes are fifteen in number, and there are three prizes in every class in the list. We observe that pens, 6 feet in length, will be provided for Pea fowl, Pheasants, Turkeys, and Geese; and that most of the railways in connection with the south and west of England have liberally consented to convey poultry for this Association at a single fare for both journeys. We must refer our friends to the schedule itself for further particulars, and conclude our remarks by stating that Charles Ballance, Esq., of Taunton, still continues his services as Hon. Secretary. His name has long been known in the poultry world as a devoted amateur, and latterly as a judge at some of our principal exhibitions; and we are sure that under his management nothing will be wanting to secure the well-being of the birds, and the satisfaction of their owners.

LIGURIAN BEES.

Did not the Apiarian Society obtain some of the Italian bees two or three seasons ago? Have any results been made known? Would it be possible to keep the two varieties of bees distinct on the same place? Where could I and my neighbours obtain some good strong hives to begin with?—Apis Mellifica.

[In the autumn of 1859 M. Hermann sent more queens than Mr. Woodbury could make room for, and he sent two of them to Mr. Tegetmeier. Both died in the winter. Next year (1860) Mr. Tegetmeier, Secretary of the Apiarian Society, had two queens from Messrs. Neighbour, but we do not know the result. The Society is, we imagine, defunct. To obtain stocks of Ligurian bees, write to T. Woodbury, Esq., Mount Radford, Exeter.]

UNITING BEES.

I have had a memorandum jotted down for a considerable time past to write a few remarks on the foregoing subject, but I am pleased to have been forestalled by your able and practical correspondent "A Renfrewshire Bee-keeper," who has, I will not say exhausted the subject, but given the results of his experience pretty much in accordance with my own. Without now intending to attempt anything like an essay on this matter, there have occurred to me a few ideas which I should like to express.

I would first premise that, having made very many forced unions of bees during the whole period of my apiarian career, I can quite coincide with your correspondent in his assertion that there is "no infallible mode of accomplishing this desirable object." Like many other particulars of the art and practice of keeping bees, what is found to answer most perfectly for one, two, or more times, will utterly and lamentably fail on a subsequent trial. For instance, when fumigating was all the rage with me, I scoured the country round for cottagers who would be willing to let me have the bees at taking-up time, instead of their destroying them with brimstone. Having had a box made about the diameter of a common hive furnished with a perforated zinc top as a slide, the fumigated bees dropped into it from among the combs, the slide was pushed in, and by the time they arrived at their new locality were generally perfectly recovered. Sometimes the hive to be strengthened was allowed to remain many hours over the bees in the box, with the zinc between them; but more frequently a quantity of smoke was puffed into the entrance, the zinc carefully withdrawn, and all means of egress closed, perhaps for twelve hours. Very frequently the bees would join as well as could be wished, the loss of life being confined to a few overdosed or otherwise accidentally-injured ones; but occasionally the sacrifice of life was woful to behold, leaving it a very doubtful point if any increase of strength had accrued to the colony which it had been desired to strengthen. Another plan adopted was simply to put the fumigated bees in a small box about 10 inches by 6 inches, and 6 inches deep, with a two-inch aperture in the bottom to correspond with that on the top of the hive; the slide was withdrawn, and the bees allowed to unite as they pleased. Although this appears to be a very risky way of attempting the accomplishment of the desired object, yet I do not now remember having had any great amount of fighting. Mr. George Fox, of Kingsbridge, in [illegible] generally adopt[illegible] his plan [illegible]

But where the hives to be taken and that to be the recipient of the fumigated bees stood together in the same apiary, another mode of procedure was invariably followed. Both hives were treated to the fumes of the byssus on their own stands. All the bees that would fall by smoke and with the aid of a little rapping being down from one, the other was inverted with its bottom board, the latter removed, and the bees from the other stock emptied and shaken down among the combs; the bottom board was replaced, and the hive reinstated in its proper position. As a rule, these junctions proved successful; but occasionally I had to experience the mortification of having been the unwilling cause of a terrible slaughter.

Whether correct or not in the conclusion arrived at, it really appeared to me that the actual gain from the union of fumigated bees was at best but very doubtful in a great number of cases. Many a hive so reinforced in autumn, exhibited in the spring a smaller population than adjoining hives which had been left alone. I once united the bees of five populous stocks, gave them a box of combs, and 10 lbs. of prime honey besides other food; yet they were a poor lot of bees all the next spring and summer, and came to grief in the end.

But I do not find it so with driven bees. Many years have elapsed since the fumigating-tube has been used in my apiary; and, probably, it will never be so applied again. Driving, I quite agree with your correspondent, is by far the most simple, easy, and altogether satisfactory mode of expelling the bees from a hive, and has been the plan adopted by me of late years. I cannot say that the junction of bees by its aid has been so marked by the freedom from disasters with which he seems to have been favoured. I do not remember having ever had a case of the loss of a hive from the death of both queens during the time that fumigation was in use; but more than once has that calamity occurred to me of late. Perhaps it has arisen from over-care in having secured the person of her majesty in a small box, and confining her with a few of her subjects among the combs for twenty-four hours.

I quite agree with your correspondent that the union of bees should be effected in as rapid and decided a manner as possible, and have adopted most of the plans he mentions. Since the introduction of frame-hives into my apiary, it has been my practice, invariably with success so far as the peaceable union of the bees was concerned, to remove the crown-board, and knock out the bees on the top of the frames. A little sprinkling of sugared water has been generally given, and so far as I have seen during summer it seems to be advisable, though by no means always absolutely necessary. A slight odour of peppermint has been adopted with satisfactory results. In this way of accomplishing the object in view, I do not remove more than one queen; nor, in fact, any at all, unless it is desirable to save the life of one in particular rather than the other. The only case of an accidental result of uniting bees by this plan occurred to a valuable Ligurian queen, which was confined for the purpose of greater security. It yet seems a doubtful point as to whether increased safety does attend her confinement. Perhaps Mr. Woodbury, who has had more experience in this particular during the two or three seasons he has manipulated with the Ligurians, will give us his views on this head.

With regard to the union of swarms there is also occasionally considerable fighting and loss; but on the whole I have been tolerably successful. A cloth is spread on the ground, a couple of sticks laid on it; and, the bees of one hive having been knocked down by a vigorous blow on the sticks, the other hive is placed over them, and thus left until the morning. It is quite immaterial whether the hive to be reinforced has been newly peopled or been occupied for some weeks. I find they unite equally well.

One case, however, that I had this last summer puzzled me not a little. All was done exactly as usual; but in the morning the garden was strewn over for many yards thickly with bees, still living, which had crawled away during the night—going to the stock-hive there was none. I have occasionally inverted the hive to be strengthened, and knocked out the other bees into it, mingling all in a most sudden union; but there is some risk to the newly-formed brittle combs, besides the dispersion of the cluster of wax-working bees, which is an evil that ought to be avoided. There does not seem to be the same necessity of a sudden commingling of the rival bees with regard to swarms, as in uniting them to an established stock, particularly in the [illegible] year; so I much prefer the plan first alluded to.

[illegible] desiring th[illegible] same should be ignorant of, or what is much the same thing, fancy himself unable satisfactorily to perform the operation of *driving*. Some few years ago, it used to appear to be an utter impossibility for me to drive a hive successfully; now, there is no operation connected with bee-management which I feel more confidence in setting about, or more easy as to the result. It is the work but of a few minutes only, with hardly a bee left among the combs, unless a few young ones which have but just vacated the cells. At all times and seasons, except, perhaps, in the winter; with hives in every state and condition of strength, full to repletion of brood or otherwise, and with or without a queen, have I succeeded in this operation. My plan being precisely that so ably given by your correspondent, nothing remains to be added on that head. Nearly all the swarms I have had this last season, were (as described in "Apiarian Notes") artificially made by driving the old stocks; and I never mean, in future, to be subjected to the annoyances and anxieties consequent on waiting for the *issue of natural swarms*. There is one other mode of uniting stocks, which I have performed very successfully within this last week, and which is applicable only to bar or frame-hives. As Mr. Woodbury initiated me into the plan, perhaps he would kindly relate it for the benefit of your readers in these pages; for, in certain matters of detail, he might not act exactly as I did. These remarks have extended to a much greater length than I at first intended, so that further trespass on your space must be avoided by—S. Bevan Fox, *Exeter*.

BEES AS CHEMISTS.

As all the results of actual experience on a debatable point are extremely valuable, I have to thank a correspondent in Lancashire for the following interesting communication which strongly confirms what has already been advanced on this subject by—A Devonshire Bee-keeper.

"I have been very much interested in the discussion published in The Journal of Horticulture on the chemical change which syrup undergoes in the stomach of the bee, as my experience coincides with yours. A few years since I had a late swarm in a very bad honey season, but which I wished to keep, and in September and October I gave them a large quantity of syrup made with ale, sugar, and honey, according to Dr. Bevan's receipt. I afterwards changed my mind, and destroyed the bees. The combs contained about 15 lbs. of honey, which were eaten for breakfast. In the comb, one of the family (a strict total abstainer) declared that he could detect the taste of beer. My sister and myself could not perceive it—at any rate the change was very great, as the syrup, before being stored away by the bees, had an unmistakeable flavour of ale.—J. L."

[We cannot admit that this is an evidence that syrup is converted into honey by the action of the bee's stomach. In the first place, one witness states that he could taste the beer, and in the second place it is only a reasonable conclusion that the 15 lbs. were a mixture of honey collected by the bees, and of the sugar and beer supplied to them. The point will not be conclusively decided until a swarm is hived, placed in a room immediately, and supplied with plain syrup only.—Eds. J. of H.]

IS FUMIGATION INJURIOUS?

INOFFENSIVENESS OF LIGURIAN BEES.

Being a timid bee-keeper, and, moreover, possessed of but little spare time, I wish to inquire if any of your readers have had any experience in fumigating, and if they have discovered any bad effect upon the stocks or injury to the queen's fecundity by the process. I have several hives whose fabric is in anything but a desirable condition, but which are otherwise strong and healthy; these I wish to Ligurianise this summer from a strong Ligurian stock I have. With my small amount of time (being absent from home all day), and limited experience, I fancy this would be best accomplished if I can now soon transfer the contents of the existing hives into bar ones; but I fear I could only manage this by fumigating, and I should be loth to do this if it inflicted a permanent injury on them.

A good deal has been said respecting the superior qualities of the Ligurian breed, but a not unimportant one I do not recollect to have seen noticed—viz., their shyness in using their stings, and the comparatively little pain produced when they are used. On unpacking a stock of Ligurian bees after a journey from "A Devonshire Bee-keeper" (and therefore they might be supposed to be somewhat vicious) I was immediately covered with them, being quite unprotected at the time, but I received not a wound until I violently crushed a number on the back of my neck, and then I was stung by thirteen of them. The effect, however, had quite disappeared in twenty minutes, whereas one application of the sting of a black rascal disfigures and pains me for two or three days. I have several times brought Ligurians to town with me (eight or nine miles) in my clothes, and occasionally they have remained about me while at business for a whole day, and have even returned with me at night, being perfectly lively at the time and myself unconscious of their presence till informed of it by other persons.—George F. Barrell, *Colney Hatch*.

"WOODBURY ON BEES AND BEE-KEEPING."

The interest which has been taken in this country in the natural history and management of the honey bee has certainly not diminished of late years, if we are to judge by the multiplicity of patent and other hives advertised for sale every year in the various periodicals devoted to the encouragement of rural pursuits, or by the books published or articles communicated to the periodical literature of the day on every branch of the subject. It is not to be wondered at, indeed, that in the pages of such a Journal as this, a corner should be devoted to bees and bee-keeping. The wonder would be that it should not; but it does indicate an extraordinary and general interest to be abroad on the subject, when we find a long and elaborate essay on bees in such a periodical as the "Quarterly Review"* There is, however, scarcely a serial or review which has not an article on bees. Thus, for instance, we had not long ago an essay from the pen of Professor Leitch in "Good Words;" another in "The Intellectual Observer," on the development of queen bees by ———; and quite recently Mr. T. W. Woodbury, of Exeter, well known to the readers of this Journal under the *nom de plume* of "A Devonshire Bee-keeper," has supplied an article on "Bees and Bee-keeping" to the "Journal of the Bath and West of England Society for the Encouragement of Agriculture, &c." This article is before me. It is written in a clear style, and gives all the information which can be desired on the subject, founded on actual knowledge. Mr. Woodbury's experience as a practical and scientific apiarian, inferior to none in this country, comes out at every page, and shows him to have read largely and observed largely. He has adopted every really valuable recommendation of older or more recent apiarians, and added to ancient bee lore much valuable knowledge of his own gathering. The public would gain by the reproduction of this essay in a cheap form, which would admit of its wide circulation among cottage bee-keepers. The peculiar merit of the essay lies in the fact that Mr. Woodbury, while hinting at many improvements, carefully avoids recommending anything that would induce the cottager to run risks by a too scientific treatment of his bees.

The article opens with a brief account of the natural history of the honey bee. Then follow a series of remarks on "The Swarming System," "Autumnal Unions," "Driving," "Union of Stocks," "The Depriving System," including collateral and storifying management, with a full account of different sorts of hives, both straw and wooden, bar and frame, single and compound, and, in short, everything that modern science has to tell about bees and their management. The article concludes with a chapter on the so-called "Ligurian bees" (more properly Italian), which Mr. Woodbury has, I believe, introduced into England. It appears, by his statement, that nine stocks which he had at the close of 1860, were multiplied as follows in 1861:—

Ligurian queen bees despatched to various parts of the kingdom ...	10
Ligurian stocks sent to a distance—one as far as Hull..................	16
Ligurian stocks and swarms remaining in my apiary.....................	26
Total....................................	52

The concluding passages will be read with interest by all who wish well to the introduction of this bee into Great Britain.

"Although I had no intention of reaping any honey harvest, I have had two supers of beautiful honey, as it were, forced upon me, one of which weighed 26 lbs. and the other 38 lbs. nett.

"From my strongest Ligurian stock I took eight artificial swarms in the spring, besides depriving it of numerous brood-combs. Finding, in June, that the bees were collecting honey so fast that the queen could not find an empty cell in which to lay an egg, I was reluctantly compelled to put on a super. When this had been filled with 38 lbs. of the finest honeycomb I removed it, and as the stock-hive (a very large one) could not contain the multitude of bees which issued from it, I formed them into another very large artificial swarm.

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* Only a few years ago.

"The foregoing facts speak for themselves; but as information on this point has been very generally asked, I have no hesitation in saying that I believe the Ligurian honey bee infinitely superior in every respect to the only species that we have hitherto been acquainted with."

This testimony in favour of the Italian race is certainly important; but some years must elapse, giving time for careful reports from various quarters, before we can speak positively as to the relative merits of the English and Italian bees.

In his note on "the swarming system," Mr. Woodbury observes very truly that it "is very bad economy to destroy old stocks and keep first swarms, as is the general practice in the west of England, because under this system there is no provision for renewing queens whose breeding powers may, and do frequently, become impaired with age, and whose ultimate death is often the unsuspected cause of the loss of what with a young queen would have continued a flourishing colony. The honey obtained from swarms of the current year is also very superior to that which can be drained from old combs, and will always command a higher figure in the market." This ought to be impressed everywhere on the minds of rustic bee-keepers, by all persons who desire pure honey to be sold in the market, and not that brown abomination compounded of the essence of bee-bread and propolis, stale and nasty, which is expressed out of old black combs. A lady friend of mine last autumn accidentally discovered what "honey" too often really is, having "looked in" at a cottage at the awful moment when the mash of comb, &c., extracted from a "lippen," was giving forth its ooze before the kitchen fire. It makes one shudder to think of it! In this instance, too, the young bees in their white state were contributing their milky juices to the profitable store!

Mr. Woodbury makes use of box-bar-hives 13 inches square, by 9 inches deep. This is an excellent size for general use where the hives stand singly in the open air, under verandahs, or in roomy bee-hives. I can, however, confidently recommend a different shaped box-hive, which I have adopted with great success these two or three years, and which is now universal in my bee-house. It is a long and narrow hive, uniformly 9½ inches wide in the clear. Ten inches would, I think, be an improvement. It is 9 inches high, and 16 inches or 17 inches long. "Every box should be of exactly the same width—*i.e.*, with a view to the bars (which run across the narrow width), being transferable from one hive to another. In this particular only do I deviate from Mr. Woodbury, whose rule I otherwise emphatically endorse—viz., that "these dimensions* must be rigidly adhered to, as every bar should fit every hive in the apiary. It is a good plan to commence by making a pattern bar of mahogany, which should be taken care of and used as a guide whenever comb-bars are required." My long and narrow hives are thus about equal in space to his, containing somewhere about 1500 cubic inches. The following reasons have induced me finally to adopt this hive:—1st, More of the comb is visible from the long side windows. 2nd, The boxes allow more room for inspection in a contracted space. 3rd, The combs being narrow can be taken out with fewer bees upon them, and are more easily handled than longer and heavier combs. 4th, The breeding-combs are kept more distinct from the store-combs, by which I mean that the inner combs are usually devoted almost entirely to the accommodation of the young bees, while the honey is generally stored in the outermost combs, most distant from the entrance. My top-boards are now made in two or three pieces, each piece covering several combs and being screwed down separately By this means I do not disturb a whole hive whe[illegible] wa[illegible] t[illegible] extract one [illegible] combs in a particul[illegible]

T[illegible] continue[illegible]

[illegible] Chiar[illegible]

[illegible] ppear from [illegible] [illegible], whi[illegible] [illegible] man [illegible] [illegible]ated th[illegible] 9th of N[illegible],

[illegible] inner edge at the back and [illegible] the bo[illegible] and below [illegible] are notches in which rest the ends of [illegible] bars. This arrangemen[illegible] the bees free passage above the comb-[illegible], which [illegible] inches [illegible] and three-[illegible]

that the Ligurian honey bee is rapidly supplanting the common species throughout the Continent, Podolia being a government in the south-western part of European Russia.—A DEVONSHIRE BEE-KEEPER.

In Podolia I met with an apiary of five hundred stocks, consisting entirely of pure Italians, the German bees being unknown there. The produce of the honey harvest for the year 1861, was 270 puds, equal to 9800 German pounds.* Therefore, three hundred stocks must have been killed, since we estimate that from this number the above-named quantity of honey would be obtained. This—*i.e.* the old-fashioned plan of killing bees, is, however, the worst mode of treatment that I am acquainted with."

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* 100 German pounds are equal to about 110 English pounds.

OUR LETTER BOX.

BROWN RED GAME AT LIVERPOOL (*S.*).—You are quite right as to the superior merits of Mr. Sandford's birds; and we have good reason for believing that he would have been awarded the first prize if his man had not disqualified the pen by sending one hen instead of two.

QUANTITY OF FOOD FOWLS REQUIRE (*Beginner*).—It is impossible to name any quantity of food. They eat much more now than they will in May and June. Feed them by hand so long as they will run after the food; but when they cease to run, you must cease to feed. You will soon arrive at an average, and it will be less than you imagine. Some breeds eat more than others.

BREEDING CAROLINA DUCKS (*Amateur de Volaille*).—The nest for a Carolina Duck is exactly like a small dog-kennel; it should be 18 inches deep, 12 inches wide, 12 inches high independent of the roof: this latter should be of the common shape. There should be an opening as in a kennel and there should be a bead in front to prevent an egg from rolling out. The floor of the hut or kennel should slant to the end for the same purpose, and there should be some holes bored to allow any water to escape. It should be fastened on a pole about 6 inches from the highest level of the water, and there should be a ladder from the box downwards: this latter should consist of a plain board, with cross-pieces nailed on for foothold. It is wise to put some of the eggs under a hen. The Ducks hatch them well, but they are not prudent mothers.

ROOST-HOUSE FOR BANTAMS (*R. Baines*).—We see no objection to this being under large trees, as the run the birds will have "is an open field with a west aspect." They will have plenty of sunlight and air there.

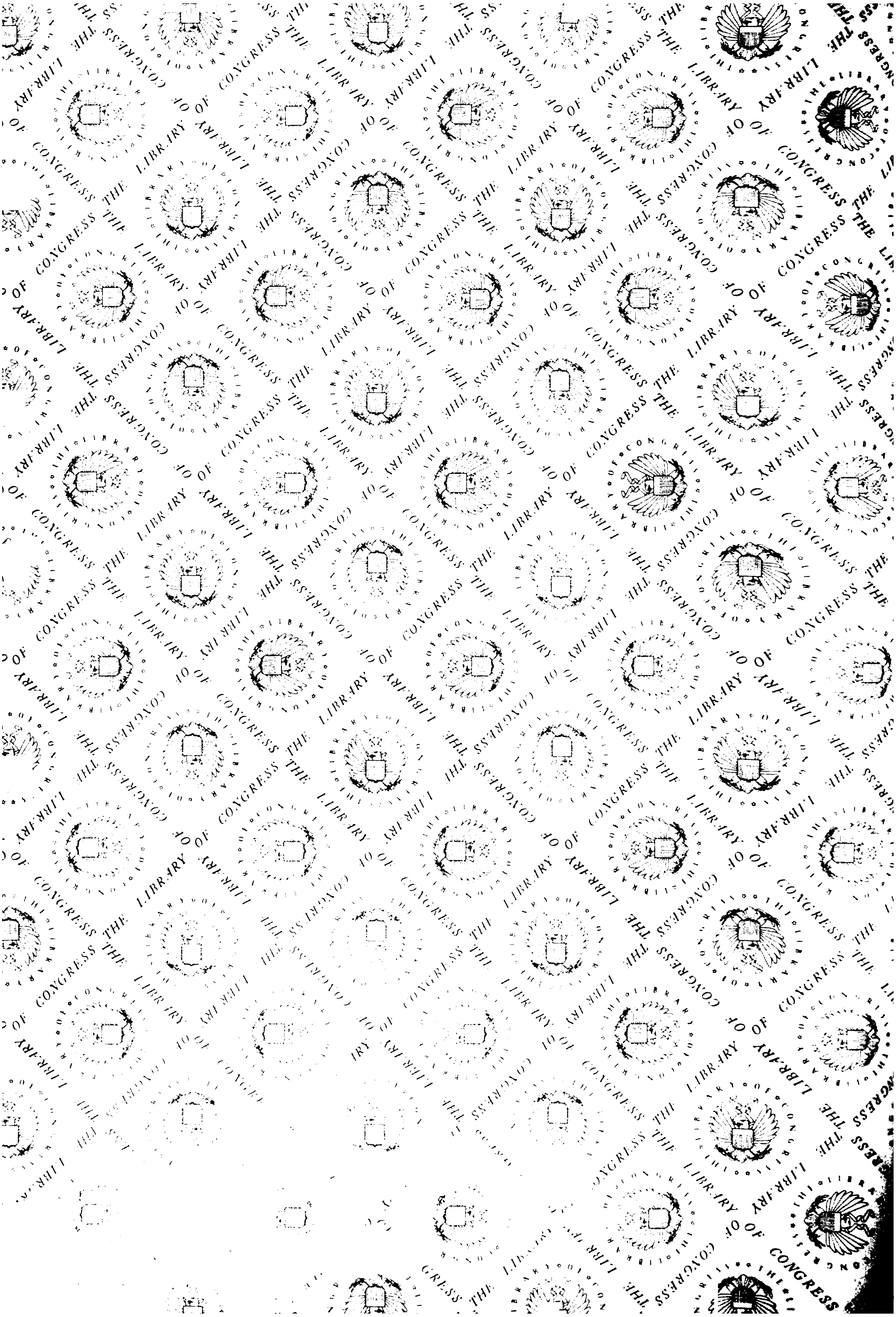
PIGEON LAYING SOFT EGGS (*Hexham*).—Your black hen Tumbler is suffering from a disease of the egg-passage. Most probably she is too fat. Put her on low diet, or short commons, with plenty of exercise. Beans contain but little fatty matter, barley even less, and will be suitable for her. Hempseed, Indian corn, and such food containing much oil would be very injurious. When next about to lay I think you may give her a goosequill full of castor oil; if given twenty-four hours before the Pigeon is expected to lay I have found great benefit from it. Anything that can be done to keep down her fat and subdue the inflammation of the oviduct will be useful. Pigeons' eggs will keep good for hatching about a fortnight. Perhaps, if put away in a cool place not damp, nor yet too dry so as to cause evaporation, in all probability they might be kept successfully for a longer period.

AVIARY (*Idem*).—If the aviary that contains the Blackbirds, Hedge Sparrows, and Robins is furnished with thick bushes or a hedge of boughs, and the birds are liberally fed they will very likely breed. The Robin with a cream-coloured breast is quite a curiosity. You should have exhibited it.

BULLFINCH AND CANARY HYBRID (*Idem*).—Mules have been bred from the cock Bullfinch and hen Canary; but their natures and sexual language are so very different that they rarely form an alliance. The Bullfinch is a late breeder, the end of April to the middle of May being their time. I fear they would not succeed well with the other birds, and should prefer trying them in a large breeding-cage. Put them together to get acquainted, then separate them (but where they can communicate), and put them together again at the breeding season.—B. P. BRENT.

TURNIPY-FLAVOURED BUTTER (———).—A quarter of an ounce of saltpetre to two gallons of cream is added to remove the flavour. We do not assert that effects the desired removal.

FATTENING CALVES (*Idem*).—We do not believe that chalk added to the milk given to fattening weaned calves has any such effect as rendering their flesh white. We think it probable that Indian meal mixed with skimmed milk would successfully fatten calves. The late Duke of Northumberland prepared skimmed milk with treacle and linseed oilcake; and it is stated that this mixture has been found to succeed ("Dickson's Practical Agriculture," vol. ii., p. 987). Here the sugar in the treacle, with the fat and gum of the oilcake, served to compensate for the cream removed from the milk. Cream, however, contains also a quantity of casein, which is not supplied in this mixture. Bruised flax-seed ("Annals of Agriculture," vol. xxiii.) and an infusion of hay ("New System of Husbandry," vol. iii.) have been added to skimmed milk for a similar purpose. On this subject it may be worthy of remark that the only kind of food in which casein exists is that derived from leguminous plants, such as beans, peas, and lentils. When bean-flour is softened and ground up with water, and the infusion passed through a sieve, the water is found to contain casein, fat (butter), and starch. The latter deposits by standing; and the infusion has now all the characters of skimmed milk, as in fact, with the exception of sugar of milk and butter, it is precisely identical with it. The addition of some fatty and gummy matter (as an infusion of linseed-cake) would more nearly approximate it to the composition of ordinary milk. And it is well worthy of remark, that in several districts of England, and in many of Scotland, pea or bean soup is very [illegible] given to young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